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The New England Journal of Medicine

Formerly The Boston Medical and Surgical Journal
Established 1828

Volume 217 AUGUST 5, 1937 Number 6

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Owned and Published by the Massachusetts Medical Society

Published weekly in Boston at 8 Fenway. Domestic, $6 per annum, 25c per copy; Canada, $7.04; Foreign, $8.52.
Entered as second-class matter, November 16, 1932, at the postoffice at Boston, Mass., under the Act of March 3, 1879.
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The New England
Journal of Medicine

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VOLUME 217 AUGUST 5, 1937 NUMBER 6

THE MEDICAL PROFESSION

CHARLES GORDON HEYD, M.D.*

NEW YORK CITY

I DID not know that this was the first occasion that the president of the American Medical Association had visited your society. I am reminded of a gentleman who, returning home one evening a little bit inebriated and losing his sense of direction, turned in to what he thought was a shelter and lay down to have a rest. As the dawn came he awakened to find himself in a burial vault. He shook himself and said: "By George, the resurrection! I'm the first one up."

Now I propose to talk to you for a few minutes upon organized medicine. There are those who say organized medicine is a vested interest, and that it seeks to control a certain particular industry for its own profit — a fallacious argument, because all the discoveries of medicine diminish the sum total of remuneration that the alleged vested interest may possibly obtain. It is the only profession that in the promulgation of its activities diminishes the business assets of the industry—a rather startling thought!

The next point is that physicians have survived throughout all recorded history, and — mark you well — they will survive any changing social pattern that the future may hold for the physicians of this country, because the physician arose with primitive man and developed with him, and it is impossible to plan a society without the doctor.

At the present time medicine feels the impingement of great social changes. At the turn of the century certain fundamental discoveries were made in medicine; these fundamental discoveries were made by doctors, and they were of such a nature that technicians and scientific men, engineers, could apply these discoveries. The abolition of typhoid required only a protected water supply; the eradication of tuberculosis involved sanitary planning and changes in nutrition; antitoxin in diphtheria can be applied with safety by technicians; and the eradication of syphilis is capable of mass treatment, also by technicians.

An address delivered at the annual dinner of the Massachusetts Medical Society, held at the Hotel Bradford, Boston, June 2, 1937.

*President of the American Medical Association.

I wonder if you realize the striking biologic changes that are taking place in society. Society in the United States is becoming preponderantly one of mature individuals. In thirty-seven years the individual span of life has been increased over eight years, and by 1960 the statisticians tell us that we shall have a stable population; one out of four or five of the population will be over sixty years of age and approaching the Biblical three score and ten.

Now what will those individuals die from in that future? They will die, first of all, of heart disease; secondly, of pneumonia; thirdly, of cancer; fourthly, of Bright's disease; fifthly, from violence; and sixthly, from apoplexy. One-half of the deaths from violence will be due to the automobile, indicating that the tempo of life has brought up death from violence to be the fifth major contributing cause of mortality.

None of these diseases can be treated by mass methods, but all will require the individual contact of the doctor with the patient. So that the very nature of the change in practice due to the biologic factor of increase in longevity will change the character of practice in this country in a material way in the next twenty-five years, and we shall require all the doctors we have. Consultations will be more numerous, personal advice more requisite, and regulation of diet more precise; and we shall come into a condition of a highly personalized sort of medical practice.

There are those who say we have too many people in this country that die of tuberculosis; that we still have deaths from diphtheria; that we occasionally have typhoid; that 8 per cent of our population is infected with syphilis; that all these are controllable conditions; and, therefore, that there must be an inadequacy of medical service in these United States.

Let us ask ourselves quite frankly, Has the medical service in the United States in the last twenty-five years been effective? The final test of medical service is the crude and gross mortality of

the people, and we have in the United States a crude mortality less than in any country that has either socialized medicine or compulsory health insurance.

The next question is, Has the practice of medicine in the last twenty-five years in the United States been scientific? A medical profession that has produced liver therapy, practically the entire structure of vitamin knowledge, all the information on bone transplantation, and modern orthopedic surgery certainly has a right to be proud of its scientific progress.

Has the distribution of medical service been effective? We must admit quite frankly that there are inadequacies in the distribution of medical service, and that there will remain inadequacies in the distribution of medical service. There are certain areas in the United States, certain states, where there is an annual per capita contribution for public health of 10 cents. Contrast that with much more advanced states that contribute $2.75 per capita for health measures. Consider that 50 per cent of the population of some states is illiterate and just barely above the sustenance level — admit that quite frankly, and admit that the major responsibility of the better states, the richer states, must be to help in the distribution of that medical service. But the economic problem of a community is not the medical problem. Why talk of sending toothbrushes into a backward area until the people in that community have been taught that the dentition of their children depends upon proper diet and not toothbrushes? There will be required a long period of education, a long period of better roads and schools, a long period of better nursing. You will always have some inadequacies in the distribution of medical service.

We distinguish in the philosophy of medical practice a curative medicine that is directed to one particular condition, and on the other hand we distinguish a preventive type of medicine, and the future health of many communities is dependent upon the ascendancy of this preventive phase.

Socialized medicine and compulsory health insurance constitute a labor problem. In 1884 Bismarck introduced the *Krankenkasse* into Germany, which took care in a curative way of wage earners but stifled preventive medicine. At least one third of the total personnel in that system is nonprofessional, and there has been created in that system a huge bureaucracy for the administration of that medical service.

In 1911 Lloyd George introduced the panel system in Great Britain. Neither the panel system nor the *Krankenkasse* meets the most salient points of present-day medical practice — those which concern the care of the indigent. All these systems are for the wage earner, who in this country under normal conditions belongs to a relatively well-paid class in the community, and in none of the systems of compulsory health insurance has any provision been made for the indigent — that group below the wage earner.

There are always two things that are not very much talked about in compulsory health insurance. One is, What will it cost? The other is, Who will pay for it? Mr. Aly, the proponent of compulsory health insurance, stated in a radio debate that a comparable system of medical services as it exists today can be purchased for 10 cents per day per person. That seems a relatively insignificant sum for all of us to contribute — 10 cents a day — for a relatively adequate medical service; but if we take the population figure for the year 1929 and multiply by the number of days and by 10 cents per person, we are paying the perfectly tremendous total of $4,485,000,000. The total amount of wages received in 1929, that remembered peak of prosperity, was $34,450,000,000. The first figure represents an amount in money equal to more than 10 per cent of the total amount of wages, and still leaves the indigent problem exactly where it is today — free services by hospitals and free services by doctors.

There will be changes in medical practice, but I do not believe they will occur on the line of socialized medicine or compulsory health insurance; rather they will occur along the lines of redistribution, if you will, of certain types of medical service through organized medical bodies—the state societies and the American Medical Association.

Just what is this American Medical Association? Many of you undoubtedly receive the *Journal* and know that the association is a federation of forty-eight states and the dependencies of Alaska and Honolulu and that all the business is carried on by a legislative body, the House of Delegates. If the American Medical Association did not exist it would very promptly be established, because it subserves a purpose which, while not usually apparent, is widespread. It is probably the closest knit body of intellectuals contributing useful service to the community in the history of the world.

In the *New York Sun* today is a leading editorial in which it is stated that eminent judges and lawyers are to get together to write a code of ethics for the legal profession. The medical profession has been living under a code of ethics for over twenty-five hundred years. Four or five hundred years before the Christian Era there arose a *superlative intelligence* who devised an oath and a code, and he became known in history as Hippocrates. The most monumental contribution in pure ethics in the history of civilization is written

into the Hippocratic Oath — and in 1937 the medical profession does not have to write a code of ethics.

What is that code of ethics? It is not to protect you or me; it is to protect the public at all times. It governs the relation of the doctor to the public; it embodies the sense of right; it demands righteousness and fair dealing; it defines what is inherent in the Ten Commandments — honor, respectability, courtesy, honesty; and it has been as lasting a blessing for society as it ever has been in the organization of medical functions.

There are unseen values that flow from organization. Can you imagine what would be the chaos if there were not an organized profession? Organized medicine is a tower, a beacon light that stands out in any community to distinguish that which is true at all times from that which is false.

The whole science of medicine has been built up through innumerable contributions of ages of men who have passed away — like an atoll in the sea, built up slowly, little by little. Jenner contributed the means of ridding the community and the world of smallpox. Koch was a relatively poor therapeutist but a great scientist. We have on one side a huge pyramid of scientific facts, and on the other side a pyramid representing the distribution of medical services. The distance between the two is the cultural and intellectual level of the community. As they approach, we are socially minded and intelligent; as the distance becomes greater, we are sliding backward.

There has always been a lag between the scientific accomplishments of medicine and their distribution. You may rightly challenge that statement. In 1906, to take one example, Schaudinn discovered the specific cause of syphilis; in 1908, Wassermann developed a precise serologic diagnostic method; in 1910, Ehrlich discovered the arsenicals; so by 1912 we had all the scientific data that we needed to eradicate syphilis; yet it took twenty-five years of public education on the part of doctors so that the word "syphilis" could be used in newspapers and spread over the air by the radio—a gap of twenty-five years between scientific knowledge and distribution.

In 1754 James Lynd, in a qualified series of experiments, definitely determined that scurvy could be prevented by giving lime juice; and in 1797 lime juice was recommended for seafaring men, and limes were stored on the bank of the Thames in London, which gave rise to the Limehouse District. Yet it was not until 1854 that the law was passed making it mandatory to serve lime juice. There was a gap between scientific knowledge and its distribution of nearly one hundred years. It takes a long time to create the cultural level that will accept all the discoveries of medical science.

The basis of all socially useful service is character. Character is primarily derived from stock, environment and education. At the turn of the century we had one hundred and sixty-six medical schools in this country, many of them inefficient, poor schools. In 1905 there was formed the Council on Medical Education and Hospitals of the American Medical Association, and since that time the American Medical Association has spent nearly three-quarters of a million dollars for improvement in the quality of medical education. We have today sixty-six Class A medical schools.

What is organization? It is the implementation of knowledge for the benefit of society. Organization in medicine is a logical development, and in the implementation of your local societies,—your districts, as you call them,—and your state society you have a potent instrument for social progress. And the confluence of all these influences is your national society, the American Medical Association, of which you individually are in a sense stockholders. It is your society.

As to the future, who knows — and please believe me, I have no political predilection in what I am about to say — what social pattern will be evolved in a world that is embroiled in a medley of chaos and a flight from reality? Yet somehow, in some way, I am optimistic enough to believe that there will emerge from all this controversy, both here and abroad, a stabler type of civilization.

I do not believe that this country has reached a stationary sufficiency. It is true that in 1890 there were no more free lands in this country. At that time frontiers were closed. The great migration from New England that opened up this country had ceased. Then began the march of industry and mechanization and the huge condensation of people in cities. The population has doubled since 1890, but graduates of institutions of higher learning have increased over 1650 per cent, manifesting the upward surge of a huge number of highly educated people. Industry has learned to take atoms in motion and has created a mechanization of everything in life, and bigness has become a dominant characteristic of this period. We shall probably break down big units. Industry certainly will, and I wonder if medicine will not adjust itself to a simpler pattern of distribution, —in backward areas possibly in an extension of some public health facilities,—but that the doctor will be canceled in his individual capacity I do not believe.

As a straw indicates the wind, in the Province of British Columbia a bill was introduced that worried the physicians. The doctors met with the

legislators and worked out a fair bill, and in that bill indigency was recognized: the indigents were to be taken care of locally where indigency existed; the hospitals rendering the service were to be paid for it; and the doctors giving the service were also to be paid. When it came into the legislative chamber those provisions were absent, and the medical profession took a vote as to whether they would practice medicine if the bill were introduced; 613 voted that they would not practice medicine and 13 voted that they would. The bill was never introduced.

I think we shall go forward, because of all the professions in history, the medical profession has put its hand into the public till the least. It has maintained itself in the past because it was self-supporting, and it will maintain its eminence in the future, marching forward, presciently, courageously and triumphantly.

116 East Fifty-Third Street.

STUDIES ON THE LOCAL AND SYSTEMATIC EFFECTS OF ACETYL BETA-METHYLCHOLINE ADMINISTERED BY IONTOPHORESIS

LAY MARTIN, M.D.*

WITH THE ASSISTANCE OF HUBERT RULAND AND LOUIS RULAND

BALTIMORE

THE purpose of these studies was to determine whether a large molecule such as acetyl β-methylcholine† could be transferred by electrolysis across the barrier of human skin into the underlying tissues. Its penetration was considered satisfactorily demonstrated if one could note significant local changes in hyperemia and sweating and such general reactions as changes in blood pressure, pulse rate and mouth temperature. Studies were also made on blood sugar, large bowel peristalsis and gastric secretion. While these studies were in progress, reports of other investigators appeared, which presented some evidence of the general effects of acetyl β-methylcholine and which our investigations corroborate. We believe that our results are worthy of reporting, not only because of their corroborative evidence, but also because they present some unreported observations.

Kovacs[1] in 1934 showed that following iontophoresis with mecholyl such generalized reactions as sweating, increase of local capillary flow, increased salivation and lowering of blood pressure occurred. Kotkis and Melchionna[2] reported a drop in blood pressure in animals subjected to the same form of therapy. Myerson[3] and his associates reported preliminary studies of the effect of this treatment on gastric secretion in man. They stated that there was an increased volume of secretion and a fall in titratable acidity. The main body of their report concerned the sharp drop of titratable acidity of the gastric juice following subcutaneous injection of the drug. Boyd et al.[4] have recently described the results of this form of therapy in arthritis and have observed an increased flow of blood in the treated fingers as well as a drop in blood pressure. We have recently described the effects of acetyl β-methylcholine iontophoresis in arthritis.[7]

METHODS

Iontophoresis is a term used for denoting the act of driving negatively or positively charged ions into the subcutaneous tissues by means of a galvanic or direct current of electricity. The instrument used was a simple but effective one, consisting of a 45-volt B battery with rheostatic control, and an attached ammeter capable of measuring milliamperes. The wire from the positive pole was divided so that two or more electrodes were available for treatment when necessary. The positive electrode consisted of a thin piece of block tin of sufficient length to surround the part to be treated. The negative electrode was a pad of cotton or wool (Morse pad). Care was taken that no sharp metal touched the skin and that both electrodes were snuggly fitted; otherwise eschars followed. The materials to be electrolyzed—normal saline or acetyl β-methylcholine in 0.25 or 0.5 per cent solutions—were applied to the skin by means of asbestos paper soaked in the desired solution. The positive electrodes were kept in place by means of cotton bandages firmly bound about them. The circuit was closed, and the amperage was slowly raised to 20 or 30 milliamperes, depending upon the local sensation of the patient, and was kept there for 20 minutes. Generally the patients experienced a mild prickling or tickling sensation until the current became stabilized. Capillary blood-sugar estimations were made by the method of Folin.[5]

From the Gastrointestinal Division of the Department of Medicine, Johns Hopkins Hospital and University.

The expenses of the investigation were defrayed by a grant from Merck and Co.

*Associate in medicine, Johns Hopkins University.

†The product used was mecholyl, supplied by Merck and Company.

OBSERVATIONS

When the necessary contacts had been made, but before the circuit was closed, the blood pressures, pulse rates and mouth temperatures of the patients were noted. They had all been in controlled room conditions for some time so these estimations could be accepted as basal, and the changes to be described were found to be of equal degree in both winter and summer.

Controls. The control cases were 12 patients who were suffering from various types and degrees of arthritis. They did not receive the acetyl β-methylcholine until they had been treated with normal saline from six to ten times. During the period of electrolysis the blood pressure, pulse rate and temperature were taken every 5 minutes. These patients showed no regularity in their responses to the treatment except that the degree of change was insignificant. They did develop a mild hyperemia at the positive electrode.

Blood Pressure. In the 22 test cases there were definite and significant changes. There was always a drop in blood pressure from 5 to 40 mm. of mercury no matter how many treatments the patient had taken. This drop usually came within the first 5 minutes of treatment, and as a general rule approached the control level before the circuit was interrupted. There were cases, however, in which the drop occurred in the later periods of electrolysis, and there were also patients whose blood pressure remained low during the period of treatments but returned later. On two occasions the blood pressure dropped over 50 mm. Both these patients had arteriosclerosis. It is worthy of note that the extreme drops in blood pressure were seen in the patients in whom the blood pressure was well above the physiologic normal.

Pulse Rate. Estimations of pulse rate were made every 5 minutes during the period of treatment on 22 patients. It was found that as the blood pressure dropped there was a concomitant increase in pulse rate of 5 to 30 beats per minute. In only 1 case was there a slowing of the pulse. In 4 instances it was impossible to demonstrate a significant change in pulse rate, and although an increased rate was an outstanding characteristic of acetyl β-methylcholine iontophoresis, it was not so regular as the drop in blood pressure. After treatment a slowing of pulse rate was always noted within 10 minutes.

Temperature. The change in mouth temperature showed more variety. In 60 per cent of the cases there was a distinct elevation, in 30 per cent there was a fall, and in 10 per cent there was no significant change. The variations in temperature were usually found to be between 0.5 and 1.4° F., well beyond the limits noted in the control cases. As the patients had all been in the room for some time before treatment was instituted and as the variations were just as notable in winter as in summer, it seemed probable that the initial temperature was basal.

Local Reactivity. During the period of treatment, the control patients at times noticed a feeling of warmth over the area treated, and after the circuit was broken, it was possible to see that there was local hyperemia. This, however, was markedly less than that seen in the test patients. Furthermore, in the latter group there was always local sweating with a feeling of chill because of increased vasodilatation. The sweating frequently continued for hours.

Salivation and Flushing. Though not always noted, many of the test patients experienced increased salivation during the period of treatment. This was particularly noticeable when areas in the upper part of the body were treated. Although flushing was a rare occurrence, it was noted at times for a fleeting period. It was also more likely to occur when the upper part of the body was treated.

Peristalsis. The effects of the treatments as evidenced by the alleviation of constipation in a large number of patients with arthritis have left no doubt in our minds that there was an increased stimulus to peristalsis. We have tried to demonstrate this graphically by means of x-ray films taken 30 minutes before treatment and just after treatment. We fully realize the potential errors inherent in such a method of study that could vitiate the interpretations. In 16 x-rayed patients, however, we obtained unquestionable results in 4. This seems to substantiate the belief that one of the effects of the general reaction of acetyl β-methylcholine iontophoresis is an increased peristalsis.

Blood Sugar. The manifold factors controlling carbohydrate metabolism seem particularly susceptible to agents which, by a specific stimulation of one of them, can upset the nicely intergraded working of the whole. Such a material as acetyl β-methylcholine seems to be particularly well suited to upset the normal carbohydrate balance by overemphasizing the action of the parasympathetic system.

We have carried out investigations on the changes in blood sugar in 24 cases. Fasting capillary blood-sugar estimations were made just before the circuit was closed, after 20 minutes of saline iontophoresis, after 20 minutes of acetyl β-methylcholine iontophoresis, and 20 minutes after the circuit was broken. There was a short lapse of time after obtaining the saline control specimen,

owing to placing the test material under the positive electrode. Variations in the blood-sugar level were noted; it was generally decreased, but we were unable to demonstrate any significant difference between the changes noted in the saline and test periods. Several cases of diabetes were also studied, but as in all the patients, the changes were not of sufficient degree to make us feel that the iontophoretic administration of acetyl β-methylcholine produced constant changes in the blood-sugar level during the period of observation. We report diminutions in the blood-sugar level from 2 to 20 and, in 1 case, to 50 mg. per cent. In 60 per cent of the patients, the drop averaged 8 mg. per cent.

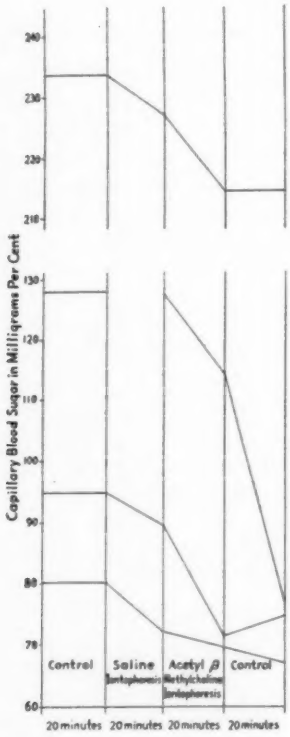

FIG. 1. Graphs showing the changes in blood sugar produced by iontophoresis with and without acetyl β-methylcholine.

Figure 1 gives an idea of the changes noted. The bottom curve is the usual result; the next curve is more or less of the same type but more exaggerated, and is the result of a test performed on a compensated diabetic; the next represents the widest variations noted; and the top curve is that of any uncompensated diabetic. Several additional patients were treated with either saline or acetyl β-methylcholine alone, and showed variations similar to those demonstrated in the first two curves. There were 4 patients in whom a rise in the blood-sugar level was noted. These patients received only the test material, and the elevation varied from 5 to 15 mg. per cent in 3 cases of arthritis and 20 mg. per cent in an uncompensated diabetic.

Gastric Analysis. Volumetric measurements and determinations of titratable acidity were made on the gastric juice of 15 patients treated by iontophoresis with acetyl β-methylcholine. On 7 of these patients, gastric analysis was also performed after stimulation with histamine hydrochloride. The data collected from these studies are given in Figure 2.

FIGURE 2. *The Effects of Iontophoretic Administration of Acetyl β-Methylcholine on Gastric Secretion: Some Comparisons of the Results Following Histamine Hydrochloride Injection*

	Acetyl β-Methylcholine by Iontophoresis								Histamine Hydrochloride Hypodermically	
	Volume in cc.					*Acidity in milli-equivalents HCl*			*Acidity in milli-equivalents HCl*	
Case No.	Fasting	20 min. before treatment	After 20 min. of treatment	20 min. after stopping treatment	Fasting	20 min. before treatment	After 20 min. of treatment	20 min. after stopping treatment	Fasting	30 min. after histamine
1	120	—	55	50	42	—	88	80		
2	60	—	13	8	36	—	42	22		
3	110	—	20	130	12	—	4	28	0	45
4	36	—	7	85	0	0	0	0	0	38
5	16	—	45	20	0	0	0	0	0	42
6	35	—	8	55	0	0	0	0		
7	31	30	60	4	0	0	0	0	0	26
8	16	45	120	12	0	0	0	8	0	28
9	97	5	117	41	14	0	0	0		
10	32	15	17	12	0	0	0	0	0	0
11	3	17	30	25	0	0	0	0	0	0
12	65	7	65	27	48	46	36	64		
13	66	12	32	17	56	36	18	46		
14	14	13	17	16	30	42	30	22		
15	24	30	54	5	30	0	20	48		

It was noted that gastric secretion was stimulated in every patient by the choline preparation and that in 47 per cent there was a normal amount of free hydrochloric acid in the secretions. It is significant, however, that the concentration of hydrochloric acid during iontophoresis was found to be higher than that noted in the fasting juice on only two occasions. What changes took place were usually downward, and if there was no free hydrochloric acid in the fasting specimen none appeared in the secretion stimulated by acetyl β-methylcholine. Both of these observations are in contrast to those noted in previous articles[6] on the acid-base balance of gastric secretion, where it was shown that following histamine stimulation a free flow of gastric secretion was almost always found to have a higher concentration of free hydrochloric

acid, and furthermore it was a common observation that free hydrochloric acid appeared in the histamine-stimulated juice when it had been absent in the fasting specimen. In 1 case, free hydrochloric acid was found in the fasting specimen and not in those following iontophoresis. In 4 patients the acid mounted during the 20-minute period following the cessation of iontophoresis.

Titratable acidity was determined after histamine stimulation on 6 patients who had an achlorhydric juice following acetyl β-methylcholine iontophoresis. In 4 of the patients, normal free hydrochloric acid secretion followed the injection of histamine. In 1 of the patients, free hydrochloric acid was found to be 28 milliequivalents after iontophoresis and 45 milliequivalents after an injection of histamine.

From these studies, it seems certain that a type of gastric secretion can be stimulated by iontophoresis with acetyl β-methylcholine, but it is unproved that the juice will contain free hydrochloric acid in amounts higher than that found in the fasting juice of the respective patients. It is also unproved that acetyl β-methylcholine so administered has any direct effect on the acid-producing cells.

DISCUSSION

Acetylcholine is known to be one of the normal constituents of the animal body, and there is almost irrefutable evidence that it is the exciting agent for those muscles innervated by the parasympathetic system. The observations that we have described are evidence that acetyl β-methylcholine when administered by iontophoresis penetrates the body, is absorbed by the blood stream, and exerts an action on the muscles activated by this system of nerves.

From our observations on these patients and a number of others not described here, we feel that there is a distinct variation in individual skin resistance, but in all instances, we have been able to find evidence of reactions to the drug that were different from those noted in saline-treated control cases.

There is another point worthy of mention: the general feeling of the patient. A number react to the treatments as though the drug were producing a tonic effect. The patients feel better, their appetites increase, they say they are stronger, and in a significant number there is a re-establishment of regular bowel movements. Much has been written about the vagotonic and the sympatheticotonic individual. Most of these ideas were expressed before the conception of the cholinergic and adrenergic nervous systems were recognized. It may be that in the treatment of those individuals in whom the sympathetic systems seem to have the ascendancy, such a drug as acetyl β-methylcholine has a place. If it can be administrated in a way that will cause slow absorption, but not too slow to permit its complete hydrolysis, much advantage may accrue. Some such method as iontophoresis deserves consideration. We say this with all due reservations, as we realize thoroughly how such a method of treatment, the value of which needs much corroboration, can be grossly misused.

SUMMARY AND CONCLUSIONS

A method of administering acetyl β-methylcholine by iontophoresis has been described.

The changes observed as a result of this administration were: (1) lowered blood pressure; (2) increased heart rate; (3) rise in mouth temperature; (4) local hyperemia, and later, sweating; (5) temporary flushing; (6) increased salivation; (7) increased peristalsis (mainly clinical observation); and (8) increased volume of gastric secretion.

The primary changes represented are similar to those produced by mild stimulation of the parasympathetic system. Pulse and temperature changes are probably secondary.

From these observations, it may be asserted that by iontophoresis molecules of acetyl β-methylcholine can be transmitted into the tissues of human beings in sufficient strength to stimulate the end organs controlled by the parasympathetic system.

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REFERENCES

1. Kovacs, J.: The iontophoresis of acetyl-beta-methylcholin chlorid in the treatment of chronic arthritis and peripheral vascular disease; preliminary report. Am. J. M. Sc. **188**:32 (July) 1934.
2. Kotkis, A. J., and Melchionna, R. H.: Physiologic effects of acetyl-beta-methyl-choline chloride by iontophoresis; preliminary report. Arch. Phys. Therapy **16**:528 (Sept.) 1935.
3. Myerson, A.: Rinkel, M., and Dameshek, W.: The autonomic pharmacology of the gastric juices. New Eng. J. Med. **215**:1005 (Nov. 26) 1936.
4. Boyd, D., Osborne, S. L., and Markson, D. E.: Observations on the use of acetyl beta methylcholine chloride in chronic arthritis. Ann. Int. Med. **10**:728 (Dec.) 1936.
5. Folin, O.: A new blood sugar method. J. Biol. Chem. **77**:421 (May) 1928.
6. Martin, L.: Acid-base balance of gastric juice, blood and urine before and at intervals after stimulation of the gastric juice by histamine. Bull. Johns Hopkins Hosp. **55**:57 (July) 1934; Gastric secretion—electrolytes before and their changes at various periods after histamine stimulation. Ann. Int. Med. **6**:91 (July) 1932.
7. Martin, L., and Eaton, G. O.: Effects of acetyl beta-methylcholine iontophoresis in arthritis. Arch. Phys. Therapy **28**:226 (April) 1937.

GEORGE WASHINGTON GAY LECTURE

Medical Ethics and the Art and Practice of Medicine

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THERE are certain fundamental and unchanging truths which should be restated and reemphasized to every new medical generation. The subject of this lectureship is a broad one, inviting expression on many vital topics, and I should be reluctant to admit that an experience of thirty-three years in practice had yielded nothing which would be of service to myself if I were beginning my career over again. Perhaps it may be of some service to others. I trust, therefore, that you will bear with me while I attempt to turn a few random furrows in an oft-plowed field.

You have doubtless been told many times that the medical profession is a noble one, and such in the past it has been; such it still is, and must remain. Its future lies in the hands of the young men entering it.

I think all but extreme pessimists believe that the world is on the whole progressing. That there is a purpose in the universe can hardly be doubted by thinking men, and that this purpose must be progress is the inward conviction of most of us. Progress is slow and intermittent, with cycles of regression, and it is not given to any one man to observe more than an infinitesimal fraction of the stupendous procession. Whatever one's belief may be as to the design of the universe, there can be little difference of opinion as to man's pressing responsibilities and obligations here and now in this mundane world in which one finds oneself.

I suppose the most valuable contribution that man can make in the great march of progress is service to his fellow man. It has been given to the medical profession to play an important part in this service. From the earliest times physicians have set up ideals and standards to keep them steadfast in their allegiance to the lofty aims of medical service. From the days of Hippocrates to the present, they have bound themselves with oaths and codes to carry on their profession according to certain standards of ethics. The Hippocratic Oath is an inspiring document which can hardly be improved upon today. The trouble with all oaths and codes, however solemn and inspiring they may be, is that they do not bind those who most need the binding. Public opinion in enlightened communities is in the long run a pretty sane arbiter of conduct. Of course, even in enlightened communities public opinion in times of excitement may be swayed by popular clamor, and pronounce false judgments which require the sober reflection of posterity to correct — corrections often made too late to benefit those wronged.

What is meant by this in relation to the medical profession is that the reputation of a doctor in his own community is pretty good measure of his deserts. Real worth is sooner or later recognized and sham and pretence unmasked. To stand well with one's fellow man is a valuable asset to the physician, which should be duly prized. To set out deliberately to win public approval, however, frequently defeats its own object. The most durable approbation is a by-product gained by sticking to one's own job and doing it well.

The example of some well-known and admired leader will often serve as a standard of ethics and practice more potent than any set of rules. It may seem to savor of hero worship, but there is nothing to be ashamed of in that. Pick out your hero, then, living or dead, and when in doubt as to conduct, refer the matter to your imaginary preceptor. What would Dr. Osler have done under the circumstances, or old Dr. X, your trusted family physician?

Freeman, in his admirable history of Robert E. Lee, tells us that when General Lee became president of Washington College after the Civil War, he was asked by a matriculant for a copy of the rules. "We have no printed rules," he said. "We have but one rule here, and it is that every student must be a gentleman." That is a good rule for life as well as for a college term. But what is a gentleman? No two answers will agree. It is easier to say what a gentleman is not than what he is. He is an ideal. If you and I and the rest of us will form our own conceptions of this ideal and strive to live up to them, the genus "gentleman," whatever it be, is not likely to disappear from the earth.

High ideals and standards, however important, and however zealously striven for, are not in themselves enough to ensure success. Do not ask me what success is, for I should then have to hesitate, and to fall back upon a well-worn word and say that all success is relative.

The chief factors of relative success in the medi-

Delivered at Tufts College Medical School, May 5, 1937.

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cal profession are, I suppose, education, intelligence, diligence and character.

The first factor needs no comment from me. If you did not realize its importance you would not be here.

The spark of intelligence is doubtless transmitted with the germ plasm. To be kindled into flame, it requires much nourishment in the form of study, observation and instruction. It is certainly in large part an acquired characteristic whose acquisition lies in our own hands.

Diligence — hard work — as a prerequisite to success in practically every field is universally recognized and accepted, and may be quickly dismissed from further consideration, but in practice it can never be remitted.

Character is, I think, the most important attribute of the really successful man, whatever his profession, but especially so in medicine. There are all degrees of character from the lofty to the low, but the word by itself means good character. This too is in part transmitted with the germ plasm, but fortunately it can be built up and self-developed. It is formed early and grows with the body, responding to training, environment and example. It is subject to one's own volition and can be altered, repaired and renewed. How much of this quality is acquired in the classrooms of our universities is a question. It is gained more through example than by precept. The playing-fields and social clubs may be greater factors in its development than the more formal requirements of the curriculum. Deep religious faith is unquestionably for many the fountainhead of character.

Character formed in youth is, unfortunately, not always proof against the vicissitudes of advancing years. It is subject to decay. The attrition of long-continued adversity or ill health may undermine it. The intoxication of sudden prosperity or sudden popularity may corrupt it. Of the four factors of success enumerated, it is by far the most precious and the rarest. There is no lack of education in these United States of America, nor of intelligence, nor of hard work. The same cannot be said of character. Even in high places it is often woefully lacking.

Armed with a good character and a good education, endowed with a fair intelligence cultivated by observation and hard work, and inspired by lofty motives, our medical aspirant cannot fail to achieve success.

There remain, however, some incidental matters of less importance which it might still be worth while to discuss.

The student of medicine about to receive his degree must make a decision, if he has not already done so, as to what branch of the profession he will enter. He has a wide choice in an alluring field.

If he finds himself irresistibly drawn by interest in human relations he will wish to become a practitioner. He is then confronted with the choice between the major divisions of medicine and surgery, and their lusty brood of specialties embracing every region and system of the human body, from the integument to the recesses of the brain and the remote abodes of the ductless glands.

The decision between medicine and surgery is usually not difficult. If there is a definite taste for a specialty, it is highly important to get some general training first, through a hospital internship in medicine or surgery, according to the specialty chosen. In the more highly differentiated specialties this may not be quite so essential, and internships in these specialties themselves may be entered upon at once. The rotating internships maintained at some hospitals are admirably adapted to give a general medical training for a man who later intends to specialize.

Apart from the practice of medicine and surgery and their associated specialties, there are the increasingly important fields of psychiatry, public health, industrial medicine and insurance. There is also the profession of teaching medicine. In the clinical branches this may well be combined with practice, but in the academic branches it is a full-time job. It would seem that every taste and talent of a medical nature might find its expression somewhere in this array of opportunities.

But how about medical research? Medical research has been greatly emphasized, perhaps a little overemphasized, in recent years. It is the laboratory cult that some of us think has been overemphasized, not the true spirit of research — "a pearl of great price." Everyone must acknowledge that research has resulted in the very greatest achievements of medical science. The benefits accruing from it to the human race have been incalculable. The investigations of Jenner, Pasteur, Lister, Koch, von Behring, Laveran, Manson, Stiles, Reed, Banting and Minot, to mention at random some of the great names associated with the conquest of disease, have alleviated or prevented untold human suffering and misery.

While I am a firm believer in the supreme importance of medical research, and fully realize that to it we must look for the great advances of the future in medicine, yet I am convinced that the emphasis that has been put upon abstract laboratory investigation has led many men to enter a field for which but few are qualified. Much second-rate and sterile work has been turned out under the sacred name of scientific research. Not

one medical graduate in a hundred, barely one in a thousand, is qualified to pursue pure laboratory research. Such men should be picked with discrimination, supervised by competent authority, and if found promising, then given every opportunity. Properly organized and endowed medical research has produced a rich harvest in recent years, and to it we confidently look for even greater things in the future, but I repeat, it is for the few; the great majority must seek elsewhere for the fulfillment of their ambitions.

I do not in the least mean that the spirit of inquiry and investigation should be discouraged or suppressed. Happily it cannot be suppressed, and crops out in quite unexpected ways and places. Valuable scientific research can be carried out incidentally on a small scale, or even on a large scale, in connection with clinical and routine medical work.

Brilliant discoveries have come most surprisingly. Everyone is familiar with the anecdote of Sir Isaac Newton and the apple. The simple experiments of Gregor Mendel in the hybridization of peas in his little garden led to the promulgation of one of the fundamental laws of heredity. Clinical research of great value to mankind has come from the investigations of countless obscure and often anonymous observers. The discoverers or inventors of the two most important economic advances of civilization, the artificial making of fire and the use of the wheel, remain obscure and nameless.

The inquiring mind will find much of interest and wonder and mystery even in the most prosaic surroundings. As an example are the observations of the Japanese surgeon, Kyusaku Ogino, on the ovulation of the human ovary, which have changed the whole aspect of the physiology of conception. Any one of ten thousand operating surgeons in this country might have made such observations, if he had had the vision. It is comforting to reflect that vision coupled with a spirit of patient inquiry may accomplish much without elaborate equipment or great financial endowment.

I assume that the majority of my hearers are going into general practice, where they are surely greatly needed, and are looking for some practical points, not for platitudes or quasi-philosophic reflections.

Let us turn for a moment to the rewards and punishments in the practice of medicine. While the material rewards of the successful practitioner of medicine or surgery are insignificant as compared with those of the successful captain of industry, movie star, song-writer or professional athlete, they are nevertheless sometimes fairly substantial, and as a rule permit of a comfortable competence.

I have seen so many instances of highly successful practitioners suddenly stricken down in their prime, leaving their families in very straitened circumstances, that I wish particularly to emphasize the duty of every doctor who has no outside financial resources to start building up an insurance fund for the benefit of his dependents as soon as his earning power begins. I cannot emphasize this too strongly; it is so easy to postpone in our minds the arrival of the rainy day, and the rainy day so often comes with such appalling suddenness. The immaterial rewards in the medical profession, great as they may be, measured in terms of affection, respect and gratitude, unfortunately will pay no bills. But do not misunderstand me. I do not wish to belittle the immaterial things; any man who has no appreciation of them has no place in the profession. The consciousness of service rendered to the best of one's capabilities is indeed the highest reward.

There are always a few rapacious individuals in the profession who, to the detriment of our reputation, attempt to extract from their patients all that the traffic will bear, but these are the exceptions. Doctors as a class have the reputation, and deservedly so, I believe, of being fair and moderate in their charges, willing to accept for their services what their patients can afford to pay, and also willing to forego all payment in many, many cases of deserving charity.

In my opinion it seldom pays to sue for an unpaid bill, and a doctor as a rule will do well to shun litigation of any kind, however exasperating it may be to be defrauded by those apparently well able to pay. I am sufficiently old-fashioned to have doubts even concerning the wisdom of employing collection agencies for collecting the bills of delinquents, except in extreme cases. I am aware that often considerable sums given up for lost are recovered in this way, but the patients themselves are usually lost. Good riddance, you may say, but a little personal solicitation and tact might save both.

With the new conception of the obligations of the state to the individual, and the promulgation of alluring programs for the attainment of social and economic security and the banishment of poverty from the land, the old ideas of private charity and service to the poor must undergo great modifications. However laudable efforts toward economic and social security may be, it is highly utopian to expect to banish poverty unless at the same time human nature is greatly changed, and there has been hitherto little evidence of any change during the past four or five thousand years of historical record. Life itself is still insecure in spite of the enormous advances of medical science. If

you should have any doubts as to this, a stroll across any of our thoroughfares at about five in the afternoon, with eyes lowered in meditation, would afford a quick and grim demonstration of its truth.

Much more can and doubtless should be done by governmental agencies to take care of the sick and indigent, and the profession will have to adapt itself to the program. It is doubtless intended within this program that the profession should receive adequate remuneration for its required services. I trust that the spirit of charity which has so nobly impelled the medical profession through the ages to render service to the destitute and needy without regard to remuneration will never be entirely extinguished by governmental regulation, however efficient.

A glance at history shows that the emoluments of the profession in the past in the service of kings and emperors were often far greater than today even with our modern monarchs of the screen, the ring and the world of sport. A French surgeon is said to have received from Louis XIV of France the equivalent of forty thousand dollars for a successful operation for fistula. On the other hand, severe punishments were sometimes handed out by these autocrats for failure to cure. Plutarch tells of the sad fate of Glaucus, one of the physicians of Alexander the Great. Hephaestion, the friend of Alexander, fell ill of a fever at Ecbatana in 323 B.C. When Glaucus, who was attending him "had gone off to the theatre, he sat down to breakfast, ate a boiled fowl, drank a huge cooler of wine, fell sick, and in a little while died. Alexander's grief at this loss knew no bounds. He immediately ordered that the manes and tails of all horses and mules should be shorn in token of mourning, and took away the battlements of the cities round about; he also crucified the wretched physician."

Such barbarous punishments fortunately are no longer exacted for failure to cure on the part of physicians; but suffering no less real because incorporeal follows unfortunate cases. The triumphs and successes of medical practice are tempered with worry, anxiety and many bitter disappointments. The conscientious doctor, especially if he is a surgeon, is subjected to a constant mental strain that will test his store of philosophy and his moral fiber to the uttermost.

The young physician's career, especially in a small community, may be blighted for many years by the unfortunate outcome of a prominent case. The moral is that it is wise for the young and inexperienced man, especially the young surgeon, to avoid the heavy responsibility of a case in which the outlook is definitely bad. It is better to show caution and call in a more experienced man whose reputation can better stand the strain of a fatality. Do not hesitate to call for consultations. It is not a sign of weakness or lack of courage, but is a sign of prudence and wisdom and often moral courage, which is appreciated by the laity. Never object to the calling of a consultant when asked for by the family, even when it seems entirely superfluous. Objection on the part of the attending doctor leads to all kinds of suspicions, and if matters take a turn for the worse later on, the objector is put in a very unfavorable light.

A satisfied patient is a real asset, but one man's food is another's poison, and it is impossible to satisfy everyone. One of the trying experiences that every practitioner has to endure is to have an old patient transfer allegiance to a colleague. One must be philosophic about such things. They probably even up in the long run, and it must be remembered that there is no ownership of patients. Free choice is a cherished prerogative of the American people.

We are now approaching the delicate subject of professional courtesy — a somewhat indefinite and nebulous zone in which few hard and fast rules can be laid down. I am not equipped to guide you very far into the intricacies of this subject. Many and devious have been its interpretations, sometimes even verging on the nonsensical. Common sense and a spirit of fair dealing, with adherence to the Golden Rule, will suffice to solve most of its problems. I will merely indicate a few generally accepted principles of conduct.

An honorable physician should scrupulously avoid undermining the confidence of a colleague's patient in his doctor. He is not obligated to refuse to treat the former patient of a colleague who comes to him spontaneously. This situation, however, is always awkward, and should be avoided if possible. The former physician should in any case be frankly informed of the circumstances.

An honorable physician cannot continue to treat a patient temporarily put in his charge by a colleague after the return of the colleague to duty, but must insist that the patient return to the original physician. If the same patient with a new ailment subsequently seeks his advice, a very delicate situation is created which should be avoided, if possible; but if the patient is insistent that he will not return to the original doctor, the latter should be frankly informed of the circumstances before the patient is accepted.

It is a generally accepted rule that a physician should not accede to the solicitations of the friends or relatives or employers of a patient to make a visit without the concurrence and presence of the attending physician except in cases of grave emergency. If the attending physician does not concur,

he must be discharged by an authorized and responsible representative of the patient before another physician can assume charge. It is highly unethical for a doctor to whom a patient is referred by another doctor for advice or treatment along some special line, in which he is supposed to have expert knowledge, to treat the patient either then or subsequently for something entirely different.

With these few words I will leave this somewhat hazy and dangerous zone of professional etiquette and proceed to another which also is not without its haze.

There has been endless discussion as to the pros and cons of telling patients the truth in regard to their condition when they are suffering from an absolutely fatal disease. It is impossible to be categorical about this, since both patients and circumstances are so variable. There can be little question that deliberate falsehood to patients can seldom be justified. It can usually be avoided by skillful evasion; even very clumsy evasion often seems to suffice. As a matter of fact, seriously ill patients do not as a rule really want to know their true condition. They frequently inquire, but what they want is reassurance that their fears are groundless. When a patient with unclouded mind, and deliberate seriousness, looking the doctor squarely in the eye, demands to know the truth as to his condition, I personally believe that he or she should be told. But be sure that you know the truth before attempting to tell it, and stick to the absolute truth.

I remember an elderly patient who continually asked if she had cancer; after many evasions she was finally told the truth. This made her very wretched for a few days, but in a little while she began to question my statement, and finally came to disbelieve it. Telling the truth in this case was very painful to both doctor and patient and was entirely futile.

I recall two instances in which the effects of telling the truth were diametrically opposite. One case was that of a rugged and cheerful business executive, who demanded that he should be told the exact truth as to his condition after an operation. When told that he had incurable cancer he seemed completely shattered, lying abjectly in his bed with his gaze fixed on the prominent, illuminated sign of a casket company across the way. He seemed completely broken in spirit and never smiled again while in the hospital. (That sign has since been removed, I am glad to say.) The other case was that of a man with hopeless cancer of the bladder who undoubtedly suffered much pain, but he was an exceedingly difficult patient, constantly complaining of everything and everybody, especially the nurses, who were continually changed at his demand. He could not understand why he was not made comfortable; finally he was told of his true condition. From that moment he was a changed man, pulled himself together, ceased his complaining, and showed real courage and resignation to the end of his ordeal.

Whatever one's belief may be about the propriety of informing patients of their true condition, there can be no difference of opinion as to the obligation of the physician to inform some responsible member of the patient's family of the true condition of things, and to explain the risk of any contemplated operation. Common honesty as well as self-interest demands this.

There are many different varieties of patients, and so too there are many varieties of bedside manners on the part of physicians. I do not think there is any advantage in trying to cultivate any special approach. It is probably better to be simply just one's self. Not all can be witty or vivacious or impressive, but nearly everyone can be quiet and sympathetic and good-tempered. Formerly there may have been a type of physician — now more often seen on the stage than in real life — who was formally dressed in black, somber and pompous, cloaking his ignorance in oracular and grandiloquent phraseology. If this ever was a type, it has been completely swept away by the tide of scientific knowledge. The doctor of today can be simple and straightforward and candid, unafraid to admit when he is puzzled, or to say he does not know. Modern scientific medicine does not require any ostentatious ritual, and never was the profession held in higher esteem by the community than today.

There is a grave responsibility upon all of us to uphold the position of trust and respect which the medical profession has won in the estimation of the public. This precious heritage must be guarded by strict adherence to the highest standards not only in professional attainments but in all professional relations with patients, colleagues and the community. Furthermore, these standards must apply also to the affairs of private life, touching morals, habits and conduct; a stiff program beyond the capabilities of some of us, no doubt, but something to be aimed at and striven for.

The vicious practice of fee-splitting, whereby a consultant or operator secretly divides the fee with the doctor bringing the patient, has been vigorously condemned by medical societies throughout the land. As far as my own observation has gone, this pernicious thing has never been prevalent in this community and is now quite effectively outlawed.

There is nothing inherently immoral in medical advertising provided that it is truthful. It is, how-

ever, a form of commercialism in medicine which has been rigidly discountenanced by all reputable medical societies. It is certainly the height of bad taste which demotes its participants to the ranks of charlatans in the eyes of all intelligent people. There are more devious and subtle ways by which commercialism is threatening the medical profession. A strong stand must be taken against this whenever and in whatever form it appears.

The practicing doctor is a quasi-public character, and he is expected by the community not only to serve the sick professionally, but in his private life to set an example of right living for the well. Intemperance is absolutely incompatible with the practice of medicine. I have seen some very promising careers wrecked by it, and others brought to the very edge of ruin. The doctor must be ready for a call to duty at any moment of the day or night. It is an exacting regime. One slip may undo the work of many laborious years. Even in minor matters of conduct and personal hygiene the doctor must watch his step. Cleanliness is a sine qua non, for the surgeon particularly. I recall a competitive examination for a surgical position in which quite brilliant display of knowledge by one of the candidates was considerably dimmed in the eyes of some members of the board of examiners by the condition of his fingernails.

The wise doctor should be sympathetic and tolerant toward human weaknesses in his patients; he should also show tolerance and broad-mindedness in other professional matters.

In this connection I will venture a somewhat heretical personal opinion that the regular medical profession in its laudable endeavors to maintain high standards has in the past been somewhat shortsighted in its intolerance toward certain irregular groups that have departed from usually accepted standards of treatment. In its ministrations to the sick the profession should not be restricted to any rigid system but should avail itself of any measure of proved value, whatever its source. The popularity of many so-called irregular systems and cults has often been due to the natural reaction on the part of the laity to either too much or too little treatment on the part of the regular profession. Homeopathy was a very natural reaction against the drastic drugging, purging, blood-letting, cupping, blistering and scarification of a past medical age. It has served its usefulness and is now passing on. Christian Science had its opportunity in the neglect by the regular profession of the mental side of disease. This lacuna has since been more than filled with an intense cultivation of the study of emotional conditions, and psychoanalysis has assumed a vogue in and out of the profession which bids fair to call for another and opposite reaction. The thriving practice of osteopaths and chiropractors indicates that there is something here of real value which the medical profession would do well to investigate, separating the wheat from the chaff and incorporating what is sound in its own armamentarium. The profession of medicine is catholic; its therapy, unfettered by dogma, need be bounded only by honesty and reason.

It is hardly necessary nowadays to stress to medical students the importance, I might say necessity, of serving a hospital internship after graduation. It gives an experience in a few months which it would take years or a lifetime to obtain otherwise. Then, too, there is the very valuable intimate association with a staff of experienced men. It should also be the ambition of every doctor to obtain eventually a hospital staff appointment if his location allows.

I am a firm believer in the value of medical societies. Much of the doctor's work and life is individualistic. He particularly needs the broadening influence of association with others who are meeting problems similar to his own. The opportunities for personal contact and discussion afforded by medical meetings are often of greater value than the formal papers presented there.

I know how impatient students become, toward the end of their course in the medical school, to lay aside their books and studies and get down to real work. But do not delude yourselves. You can never lay aside your studies and retain a worthwhile position in such an ever-changing profession as that of medicine. Once enrolled in your profession, you are sentenced to study for life.

I marvel at the store of scientific knowledge which the medical student of today has to acquire, and how readily he seems to assimilate the newer conceptions of physiology, biochemistry and biophysics, which to many of us of an older generation are almost incomprehensible. It requires an active mind and constant application to keep abreast of the progress of medicine, and it is hopeless to attempt to do so except in a limited field. A young doctor receiving his degree in 1937 whose mind should remain completely closed to anything new for a period of ten years would, I venture to say, in 1947 be hopelessly out of date and behind the times. The changes that have taken place since my day of hospital internship, when we thought we knew it all, are simply staggering.

Yet diseases have not changed, patients have not changed, symptoms have not changed. Meakins states that in an analysis of one thousand clinical histories there were but forty-nine different complaints. What has changed has been the conception of the nature of many diseases and the methods of diagnosis and treatment.

For instance, pernicious anemia was regarded in my younger days as a disease of the blood, later as a disease of the bone marrow, and now I under-

stand it is regarded as a deficiency in the chemistry of the gastric juice. In the future it may be further relegated to some imbalance of the ductless glands or dysfunction of the autonomic nervous system. Then there was no treatment. Now it is under control.

Since 1900 the causes of many infectious diseases including yellow fever, sleeping sickness, syphilis, dysentery, hookworm and many others have been discovered. Countless diagnostic tests and curative serums and inoculations of the highest value have been introduced.

New operations, new appliances, new drugs have revolutionized practice. The employment of the x-ray, the electrocardiograph and the metabolism chamber are now almost a matter of routine in physical examination. Amazing developments have taken place in abdominal, thoracic, neural, plastic and bone surgery and in the surgery of blood vessels and ductless glands. Blood transfusion, rubber gloves, spinal and local anesthesia, now regarded as matters of routine, were epochal innovations which markedly changed the surgery of my hospital days. An enormous mass of data concerning allergy, endocrinology, blood chemistry, the autonomic nervous system and the vitamins which was unknown to a previous generation has to be assimilated by the medical man of today.

The very language is changing. Even in anatomy, which one might assume to be a static science, old names are passing and new ones taking their places. I hope that some of the old familiar names such as the triangle of Scarpa, the aqueduct of Sylvius, the tubes of Fallopius and Eustachius, and so forth will survive to lend a classic charm to a rather dry subject. But if old names are disappearing in anatomy, that is more than offset by the flood of new names appearing in clinical medicine in connection with every conceivable test and sign. The other day I came across the word "dysdiadokokinesia," truly an imposing word, that means simply the rapid alternate pronation and supination of the forearm. The word is new, but the action was doubtlessly practiced by our arboreal ancestors as they gathered nuts from the trees.

Fortunately, with the accumulating sum of knowledge and elaborate technic which you are required to master nowadays, you are spared a few minor procedures with which we of an older generation had to struggle. How many hours we spent examining urinary sediments for the mysterious waxy casts of fateful portent or trying to differentiate the small epithelial cells of the pelvis of the kidney, the ureter and the neck of the bladder. The cystoscope, x-ray and kidney function tests have done away with much of this exhausting and sterile work. The x-ray has likewise supplanted many other laborious clinical procedures. The stomach tube as a diagnostic aid is no longer plied with the fervor of former times, and even auscultation and percussion have lost something of their glamour, now that the roentgen ray clarifies the hidden mysteries of the thorax. The ability to percuss out a heart was the sign of an expert clinician in my day. The starched bandage, the diazo reaction and the opsonic index have gone to the medical dust heap with much else.

To keep up with the procession the medical man of today must indeed be keen and alert. He should attend his medical society meetings, take an occasional postgraduate course, subscribe to and read at least one medical journal, and visit his medical library to consult a wider field of current literature, especially in his own line. Let me recommend the practice of keeping a card index of articles that especially interest you.

With such a burden of tasks and duties as I have outlined heaped on the shoulders of the practitioner of medicine, it is essential that he occasionally seek relaxation and recreation. This is now well recognized by the laity, which no longer begrudges the doctor his brief respites from duty. Some avocation outside the medical profession is very helpful in keeping a fresh mind and a cheerful spirit. Much enjoyment and some real achievements have resulted from the excursions of busy doctors into the fields of art, literature, music and science. A love of outdoor life seems to be wellnigh universal among doctors. They frequently prescribe this for their patients, and in this case, at least, relish taking a little of their own medicine.

A pleasant and gentle avocation, and a very instructive one, which should appeal to graduates of this school, inspired by the enthusiasm for the subject of one of your professors, is the reading of medical history. Although history repeats itself less in medicine than in other lines of human endeavor, even here a knowledge of the past gives some insight into the future.

It must never be forgotten even in this age of science that the doctor must treat the patient as well as the disease, and that neither the traits and characteristics of patients nor their symptoms have changed appreciably since the time of Imhotep.

279 Beacon Street.

THE MANAGEMENT OF GONORRHEA

V. The Treatment of Gonorrhea in the Male: Details of Procedure

NEISSERIAN MEDICAL SOCIETY OF MASSACHUSETTS

THE management of gonorrhea is an art. There is no magic formula for its cure, and short-cut procedures end only in chronicity and complications. Yet the medical profession continues to grasp at every new and untried therapeutic concoction. It still accepts, without question, the glib nonsense of the medically ignorant therapeutic house salesman. It will not wait upon the verdict of the expert within the profession. Within a decade, vaccines, diathermy and various dyes have come and gone, and the filtrates now strut across the stage.

It is easy to give a patient pills which impart to the urine a psychologically gratifying color, or to prescribe a syringe and a few ounces of argyrol, or to inject an expensive biologic preparation and let it go at that. Many patients have discovered that the druggist can do as well at considerably less expense. The physician who wishes to see the infection cured and who is interested in the welfare of the patient and the protection of the public health will hope to accomplish more than the relief of annoying symptoms. It is he who will discover that the successful management of gonorrhea *is* an art.

Much as the details may vary, the principles of sound treatment are everywhere the same. These principles have been discussed in another article (No. 4 of this series), but they are worth brief repetition here. They are:

1. To educate and instruct the patient as to the nature of gonorrhea and what is required for its cure and control.

2. To control the patient's behavior, particularly as it concerns sexual excitement and the consumption of alcohol and carbonated or "spicy" drinks, such as ginger ale.

3. To secure the patient's understanding co-operation.

4. To see to the continuity of treatment, taking into account the patient's convenience and ability to pay.

5. To avoid any procedure which in itself damages tissue and thus retards recovery or causes complications. Gentleness is the first principle of good technic. Use mild, nonirritating medication at low irrigating and injection pressure; neither overtreat nor undertreat; avoid all instrumentation of the inflamed urethra.

6. To remember that, at the proper time, the prostate will require examination, and usually treatment.

7. To be patient, but intelligently persistent in the aim to cure, and to evaluate cure properly.

8. To remember that there are no short cuts to the cure of gonorrhea.

The following description of a treatment for gonorrhea depends upon strict adherence to the principles stated above. It will serve as the sketch according to which the artist can paint his picture, and offer a selection of the pigments which he may use. It will not paint the picture for him. He must learn for himself that a lighter touch here and a modification of color combination there will produce a more satisfactory result. It is assumed that the physician has made the correct diagnosis (Nos. 1 and 2 of this series); that he understands the importance of the co-operation and control of the patient; and that he now wishes to know, step by step, how to proceed.

THE ARMAMENTARIUM

Sitz Baths. Treatment should never cause pain. If the inflammatory reaction is severe, irrigations and injections are almost sure to do so. If there is edema, pain, a profuse discharge, hematuria, phimosis or paraphimosis, a preliminary course of sitz baths is in order. These should be taken in water as hot as the patient can comfortably stand, for 10 to 15 minutes at a time.

If the patient has no tub in which to take sitz baths, hot penile soaks may be substituted in anterior urethritis, or hot rectal irrigations or penile and perineal soaks in posterior urethritis.

Urinary Sedatives. Although there is some disagreement over the value of urinary sedatives, they can do no harm. They may relieve the patient's mind if he has annoying symptoms such as pain, burning, frequency or dysuria. They are usually asked for in posterior urethritis. Sandalwood oil is the most widely used. Alkalies, balsams, bromides, hyoscyamus and various other drugs are

This is the fifth of a series of articles by the Neisserian Medical Society of Massachusetts on the management of gonorrhea. The others have appeared in the *Journal* as follows:

1. The laboratory in the diagnosis of gonorrhea. **210**:362 (Feb. 15) 1934.
2. The clinical diagnosis of gonorrhea. **211**:221 (Aug. 2) 1934.
3. The clinical diagnosis in the adult female. **212**:823 (May 2) 1935.
4. The treatment of gonorrhea in the male. **214**:527 (Mar. 12) 1936.

used less commonly. If the pain is severe, especially in early posterior urethritis, opium suppositories or some other potent analgesic may be indicated.

Water. Whether the fluid intake must be reduced for effective concentration of the urinary sedative, and whether such a reduction in fluid intake is in itself harmful, are much debated. Most physicians prescribe water in copious amounts regardless of whether a sedative is given. Empirically, at least, this gives the greater importance to fluid intake. Water dilutes the urine, makes it bland, and causes frequent flushing of the urethra.

Urethral Irrigations. Potassium permanganate, 1:10,000, is the irrigant of choice. It should be delivered from a reservoir rather than from a syringe, since the reservoir cannot deliver the irrigant at a pressure greater than the height of the fluid column. The upper level of the fluid in the reservoir should never be higher than *two* or at the very most *three feet* above the level of the urethra. The irrigant should be as warm as the patient can comfortably stand it, but not over 110° F. in the reservoir. The patient may stand, holding a basin to catch the waste (or at a straddle sink), or he may lie on a table with a basin between his legs. If the patient lying down is unable to relax the cutoff muscle for posterior urethral irrigations, have him try it standing up.

The irrigation is given through a rubber, glass or metal tip (preferably equipped with a guard to prevent splashing), which fits into the meatus. A clamp or some other means for shutting off the supply should be attached to the rubber tubing near enough at hand to be readily accessible. The penis is held in the left hand and the irrigator in the right, the thumb controlling the rate of flow. The irrigant is allowed gently to fill the anterior urethra but not to distend it. The tip is then withdrawn sufficiently so that the irrigant may escape before a fresh supply flows in. This alternate filling and emptying of the urethra, expertly done, is practically a continuous operation.

Posterior urethral irrigations are given by filling the bladder with irrigant which the patient subsequently voids. The same irrigant is used and the same equipment. The meatal tip is held against the meatus, the anterior urethra is filled and the patient is asked to relax as if to void. If both physician and patient have patience, this is not a difficult procedure, and it avoids the passage of a catheter into the urethra. If for any reason the patient cannot be persuaded to release the cutoff, a small, flexible rubber catheter, well-lubricated, must replace the tip. It is inserted, slowly and without force, to the cutoff and held lightly against it until the catheter is permitted to pass.

Needless to say, all instruments should be sterilized before each use.

Urethral Injections. One of the organic silver salts is the drug of choice; which one is chosen depends largely upon what the patient can afford and how important it is to avoid staining the clothing. Argyrol and silver nucleinate will stain fabrics. Silver nucleinate is less expensive. Protargol and neosilvol are cleaner. Protargol is the less expensive. Argyrol, silver nucleinate and neosilvol may be used in 5 per cent solutions and protargol in strengths of 0.25 to 0.5 per cent.

The injection is best given with a glass syringe of the Asepto type, with a rubber bulb and a capacity of 1 dram. The patient should void before receiving the injection. When it has been given, the meatus should be closed by squeezing the glans at the meatus between the fingers (of the patient) and the medication retained from 3 to 5 minutes *by the clock*. A proper dressing, such as a gonorrhea bag or a butterfly dressing, should then be applied. The former should contain gauze not cotton. The latter will collect urethral discharge but will not protect the clothing against the stains of colored medication. The patient should be instructed not to void until an hour after the injection, if possible.

Opinion is divided concerning whether the patient should be allowed to treat himself if he can make the required number of visits to the doctor's office. It is agreed, however, that he should be permitted to do so only if he has the intelligence to do it properly and has been carefully instructed in its technic.

If the patient cannot manage or afford to visit the doctor's office as often as desirable, it may be necessary to leave some of the treatment of an anterior urethritis to him. He should never be allowed to irrigate his own urethra but only to inject. He should be carefully instructed to cleanse and boil his syringe and to destroy old dressings.

Smears. Smears of the urethral discharge should be examined once a week, and oftener if there is any failure to respond to treatment or any exacerbation of symptoms or discharge. They should be examined particularly for gonococci, other bacteria and pus cells. Although the gram stain should be used in making the diagnosis, a methylene blue stain will do for routine purposes thereafter, unless complications occur and it is important to know whether gram-negative diplococci are still present. Smears should be examined regularly so long as there is any discharge. If there is only a morning drop, the patient should be given slides, with instructions as to how to make and to preserve smears for examination.

Smears of prostatic secretion following prostatic massage also should be examined at weekly inter-

vals at first, especial attention being paid to the pus content. After the first few weeks, examination of the secretion after each fifth or sixth massage will be sufficient, unless relapse is suspected, in which case more frequent examinations should be made. All stained smear examinations should be made under oil-immersion magnification.

The Two-Glass Test: The two-glass examination of the urine should be made at each visit of the patient to the office. The patient should be instructed to refrain from voiding for at least 1 hour and if possible 2 hours before this test is to be made or it may have no significance. A supply of dilute acetic acid should always be at hand and a few drops added to dissolve any phosphates that may cause confusion.

The first examination, at least, should include tests for albumin and sugar. An occasional smear of a specimen of centrifuged urinary sediment will disclose the presence of pus and even gonococci not otherwise discoverable.

The results of the two-glass test may be recorded very conveniently in chart form according to a method described by Pelouze.* It is well worth while to do so, since it pictures the patient's progress (or the absence of progress) graphically and at a glance.

At the beginning of a posterior extension or in a mild or subsiding posterior infection, there may not be enough pus produced to flow back into and contaminate the urine in the bladder. The pus in the entire urethra will be contained in the first glass, and the second glass will be clear, thus leading to error in diagnosis.

Whenever it becomes advisable to consider the possibility of a posterior infection, the anterior urethra should be well irrigated before the patient voids. The first ounce or two of urine should then be collected in a separate glass. If it is hazy or cloudy (after acetic acid has been added) or if it contains shreds, the diagnosis of posterior infection may be made.

Prostatic Exploration and Massage: Any exploration of the prostate to determine whether it has been involved in the infection must be done cautiously by careful palpation. When massage is in order, the prostate should be stroked very gently at first, the firmness of the stroke being increased in subsequent sessions as indicated by progressive decrease in tenderness. At no time should the massage be vigorous. Vertical strokes are used, beginning at the lateral borders and working toward the midline. The last stroke should strip the prostatic portion of the urethra in the midline.

It is essential to delay massage of this structure if there is any tenderness, for complications may be caused by hurry. The prostate is always involved if the infection extends into the posterior urethra.

*Pelouze, P. S.: Gonococcal Urethritis in the Male. Philadelphia. W. B. Saunders Co. 1928.

THE TREATMENT OF ANTERIOR URETHRITIS

Although the majority of gonococcal infections have already extended into the posterior urethra when the druggist is deserted and medical attention is sought, the general practitioner will see some cases of uncomplicated anterior urethritis. The specialist sees fewer because his advice is often not sought until the infection has extended, or is resistant to treatment, or until complications have occurred. The proper treatment of an uncomplicated anterior urethritis in a co-operative patient is relatively simple. Some will extend posteriorly in spite of the best management, but they will almost always do so under poor management. Once the infection has reached the posterior urethra, treatment becomes more difficult, cure is greatly delayed, the patient becomes restless and stops treatment as soon as the symptoms disappear and, not infrequently, serious complications occur.

Sitz Baths. Two or three a day until the severe symptoms have subsided. Two or 3 days of sitz baths are ordinarily enough, but in exceptional cases they may be needed for as long as a week. Although they are not so satisfactory, two or three hot penile soaks per day may be substituted for the sitz baths if the patient does not have a tub.

Urinary Sedatives. If a urinary sedative is indicated by the discomfort of the patient, give sandalwood oil, in capsules, in 5 to 10 minim doses, three times a day, *after meals.* Sandalwood oil should be prescribed from the beginning and continued, as a rule, for a week or two longer if the symptoms persist.

Water. Not less than 8 to 12 glasses per day (at least 1 glass every hour or two and preferably more). The amount can be checked by the colorless appearance and low specific gravity of the urine. This should be prescribed from the beginning and daily thereafter until there are no symptoms or discharge but, in any case, for at least 3 or 4 weeks.

Urethral Irrigations. These should be given from the beginning if the inflammatory reaction is no more than moderate; otherwise they should be deferred until sitz baths or penile soaks have caused the symptoms and the profuse discharge to subside. It is safer to depend upon the baths or soaks for a day or two longer than necessary than to begin urethral treatment too soon. Ideally, the urethra should be irrigated daily. The adequate minimum is two or three times a week. Irrigations should be continued at the initial frequency until the discharge has almost or actually disappeared. They may then be reduced to a final minimum of one a

week and continued at that rate until symptoms and discharge have been absent for 3 or 4 weeks and the two-glass test has been negative for 2 or 3 weeks. About 1 liter (quart) of 1:10,000 potassium permanganate solution is used per irrigation. If there is any exacerbation of symptoms or discharge, and if it is clear that there has been no posterior extension, the irrigations may have to be increased in frequency for a time.

Urethral Injections by the Physician. These are optional. If given, they should follow irrigation. They may be discontinued when the symptoms and discharge disappear and the urine is clear, although the permanganate irrigations will be continued for 2 or 3 weeks or more thereafter.

Urethral Injections by the Patient, if Permitted. Two or three per day (morning and night, or morning, noon and night) may be given, beginning when urethral treatment is given in the office and continuing until the discharge has almost subsided; thereafter, not more than one per day is indicated. They are to be discontinued when the discharge has disappeared and the urine is clear.

Smears. Gonococci should disappear in from a few days to 3 or 4 weeks in an uncomplicated case, but pus cells in abnormal numbers (more than 2 or 3 per oil-immersion field) may be found for from 1 to 4 weeks longer.

The Two-Glass Test. The first glass will be cloudy or hazy until the urethral infection has subsided and may contain shreds for 2 or 3 weeks longer. As the infection subsides, the urine will become more sparkling in appearance.

The Prostate Gland. When it appears that the anterior urethritis has been cured, that is, when symptoms and discharge have been absent for 2 or 3 weeks, and the urine has been clear and sparkling for at least 2 weeks, the prostate gland should be examined. If it appears to be normal in size and consistency and is not in the least tender, it may be massaged gently and its secretion examined microscopically. In no case should this examination be made sooner than 4 weeks after treatment was begun, unless the infection has obviously reached the posterior urethra and it is important to know how serious the prostatic involvement may be. It is better to delay examination of this structure, if it does not seem to be involved, than to cause complications by being in too much of a hurry. At least three or four examinations should be made of the gland and its secretion, about a week apart, before it is finally concluded that it has not been involved; the smears should contain less than 3 or 4 pus cells per oil-immersion field.

Tests for Cure. A variety of tests may be used. The one most commonly employed is the calibration of the urethra by the passage of sounds or bougies. One or two well-lubricated sounds are passed to the cut-off muscle. If the first is obviously much too small, a larger one is used. The patient is instructed to make smears of any subsequent discharge and to report promptly for examination. If the smears contain more than a few pus cells per oil-immersion field or any gonococci, or if the discharge persists more than a day or two, a return to treatment is indicated. The test should be repeated in a week or two, and again a few weeks later.

If these tests with sounds cause no relapse, a glass or two of ginger ale may be allowed—or sexual excitement permitted. If intercourse is attempted, a condom should be used for the protection of the partner, as well as to avoid a confusing reinfection.

Tests for cure should never be attempted until there is every reason to believe that the infection is cured. Delay for a week or two longer than necessary is better than the chance of stirring up an uncured infection.

COMPLICATIONS IN ANTERIOR URETHRITIS

1. Posterior extension may occur at any time. It may be recognized by the cloudy or hazy urine in both glasses of the two-glass test, frequent urination or bladder discomfort. There may be terminal hematuria, pain and a very tender prostate. All treatment except the sitz baths should be stopped at once and the infection handled as described under the treatment of posterior urethritis.

2. Phimosis, if inflammatory, will usually respond to hot soaks. If not or if the foreskin is normally too tight, a dorsal slit may be necessary to facilitate treatment. Paraphimosis is sometimes a complication. It should be reduced, hot soaks applied and, if absolutely necessary, a dorsal slit made.

3. Meatotomy is rarely necessary, but it may be so if there is a very small, pin-point meatus, which interferes with drainage.

4. Sometimes, after reasonable treatment, a morning drop persists which will not subside after weeks of treatment. The urine will be clear except for many shreds. If the prostate is not involved and if further reduction in the number of irrigations and injections makes no impression, gentle massage of the penis over a sound may provide the necessary drainage of the urethral glands and cause resolution of the infiltration.

5. Para-urethral abscess, sinus, and so forth, may require surgical intervention. Consultation is advised.

6. An old stricture may present a serious com-

plication. Consultation is advised since no standard rule can be stated as to procedure.

7. The possibility of infection with syphilis must be kept in mind. A chancre or mucous patches on the genitalia or within the urethra constitute a danger to both patient and physician. A blood test at the beginning of treatment and one each week thereafter for 2 months is advisable, as well as routine physical inspection.

THE TREATMENT OF POSTERIOR URETHRITIS

If during treatment an anterior urethral infection extends posteriorly, or if the patient presents a posterior infection when he appears at the doctor's office, caution is in order. All urethral treatment must be stopped at once. It is important to know the condition of the prostate. This may be determined by the most cautious rectal exploration. Trauma of any kind must be avoided as it is the cause of prostatic abscess. If there is any question of abscess (severe pain, difficult urination, painful defecation, extreme tenderness, fever or fluctuation), consultation is strongly advised.

Sitz Baths. Serious complications, such as vesiculitis, prostatic abscess, epididymitis, rheumatism and urethral damage ending in stricture, frequently follow too early meddling. The sole objective of treatment in the early days of a posterior urethritis is to cause the inflammatory reaction to subside as quickly as possible and to make the patient comfortable. This is best accomplished with sitz baths, sedatives and forced fluids. Two or three sitz baths a day should be prescribed and continued until the symptoms have subsided. This will ordinarily occur within a week. If the patient has no tub, hot penile and perineal soaks, rest in bed and even hospitalization may be in order, especially if the prostatic involvement is severe. In many cases, hot rectal irrigations, with a two-way rectal tube, are of great benefit even though sitz baths are also given.

Sedatives. As a urinary sedative, sandalwood oil, in 5 to 10 minim doses, three times a day, *after meals,* may suffice. If the pain is severe, opium suppositories or some other effective analgesic may be needed for a day or two. The sandalwood oil may be discontinued a few days after the symptoms have disappeared. The patient should be urged to void as frequently as possible and to avoid overdistention of the bladder, for epididymitis may otherwise result.

Water. Not less than 8 to 12 glasses per day (at least 1 glass every hour or two and preferably more) should be prescribed from the beginning and at least until all symptoms and discharge have disappeared. No harm will be done if the fluid intake is kept high until massage has brought about marked improvement in the prostate gland.

Urethral Irrigations. Patience will pay real dividends here. Whether or not sitz baths are used, the urethra should not be treated until the inflammatory reaction has subsided, the symptoms have almost completely disappeared and little more remains than a moderate urethral discharge. Then two or three irrigations may be given each week (every second or third day) with 1:10,000 potassium permanganate solution. About a liter (quart) of irrigant is used for the anterior urethra. After the anterior irrigation, 200 cc. (6 to 8 ounces) of irrigant, but never enough to cause discomfort, are allowed to run into the bladder. This is then voided. The irrigations are continued at this rate until prostatic massage is begun, when their number is adjusted to the number of massages.

Urethral Injections by the Patient. Self-medication in posterior urethritis should never be permitted.

Prostatic Massage. Except for cautious exploration of the prostate at the beginning of the posterior urethritis, and subsequently as symptoms point to its severe involvement, this gland is left carefully alone. Under no circumstances should massage be considered in less than from 4 to 6 weeks after the beginning of treatment. When any symptoms such as pain, inflammation, frequency, dysuria, hematuria or bladder discomfort have been absent for at least 2 or 3 weeks, and both urines are clear except for shreds or at the most a slight haziness in the first glass, exploration and subsequent massage of the prostate may be considered.

At first the bladder is partly filled with irrigant, as usual, before each massage. Later on, when only a few shreds remain, the gland may be massaged before the patient voids, the urine serving as an irrigant. The irrigant, or urine, is voided after the massage.

The first massage should be little more than an exploration. If the gland is tender, it should be left alone and the irrigations continued. When it is safe to proceed, the first few massages should be little more than light stroking. Whether a smear of prostatic secretion can be obtained at first is of no significance. If massage causes a return or increase of discharge, it should be discontinued temporarily until irrigations have brought about the necessary improvement.

The prostate should not be massaged oftener than twice a week. When the pus content of the secretion declines to approximately 10 cells per oil-immersion field, the massages may be reduced to one per week and continued at that rate until there have been not more than 3 to 5 cells per field for a period of 3 or 4 weeks. The urine should then be entirely clear, sparkling and essentially free from shreds. The average uncomplicated infection in

a co-operative patient will require prostatic massage for from 3 to 6 months.

If improvement ceases at any time, the massages should be discontinued for 2 or 3 weeks and then resumed. More damage may be caused by overtreatment than by proceeding slowly and cautiously.

The Vesicles. Stripping of the vesicles is important. This may be accomplished during prostatic massage by carrying the finger as far above and lateral to the gland as possible and by making vertical strokes on either side of the midline. The effect of this stripping may often be seen in the large amount of debris in the voided irrigant after massage.

Tests for Cure. The test most commonly employed is the calibration of the urethra by the passage of sounds. One or two well-lubricated sounds are passed carefully into the bladder. The patient is instructed to make smears of any subsequent discharge and to report promptly for examination. If the smears contain more than a few pus cells or any gonococci, or if the discharge persists more than a day or two, a return to treatment is indicated. The prostatic secretion also should be checked for its pus content. The test should be repeated in from 4 to 6 weeks and the prostatic secretion examined three or four times thereafter at 2- or 3-week intervals.

If these tests with sounds cause no relapse, a glass or two of ginger ale may be allowed or sexual excitement permitted. If intercourse is attempted, a condom should be used for the protection of the partner, as well as to avoid a confusing reinfection.

Tests for cure should never be attempted until there is every reason to believe that the infection is cured. To delay for 2 or 3 weeks longer than necessary is better than to chance stirring up an uncured infection. Time is an important element. Neither patient nor physician should become discouraged if the successful treatment of a posterior urethritis and prostatitis requires from 4 to 6 months, or longer. To this should be added another 2 or 3 months of observation for cure.

COMPLICATIONS IN POSTERIOR URETHRITIS*

1. If epididymitis develops, all treatment should be stopped at once and not resumed until the epididymitis has subsided.

2. With a prostatic abscess, all treatment except sitz baths should be discontinued until the abscess has resolved or has been drained.

3. In the presence of gonococcal arthritis, continue the treatment of the genito-urinary infection.

If any of the above complications occur, consultation is in order. Less common complications which indicate cessation of treatment and also call for prompt consultation are periurethral abscess, endocarditis, meningitis, acute retention and abscess of Cowper's glands.

IN GENERAL

It is obvious that all patients will respond differently to treatment. Poor conduct on the part of the patient, rough treatment by the physician, impatience with slow progress and attempts to hasten it, and inability to make the correct decision between going ahead and delay, all will be reflected in poor results and complications. No two infections will respond in exactly the same way. Nothing is so important in the management of gonorrhea as the intelligent and constant evaluation of the effect of each procedure. Patience, observation and experience produce the expert. The inexpert do more damage than good. The treatment of gonorrhea is more than a duty, it is a responsibility. Its improper or inadequate treatment will result only in harm to the patient and in the infection of his sexual contacts. Until the infected person receives better treatment from the medical profession than from the druggist there will be little incentive on his part to seek and pay for medical care.

It will also be obvious that a microscope, slides and stains and the ability and willingness to use them are essential to the proper management of gonorrhea.

*The management of complications will be discussed in a later paper.

113 Bay State Road, Boston.

TREATMENT OF THE MENOPAUSE SYNDROME BY IRRADIATION OF THE PITUITARY GLAND

ROBERT ZOLLINGER, M.D.,* AND WALTER W. VAUGHAN, M.D.†

BOSTON

IRRADIATION of the pituitary body has been recommended as a valuable therapeutic agent in various gynecologic disorders. Hofbauer[1] first applied this form of treatment for functional bleeding. Groedel[2] and Werner[3] stressed the benefits derived from it in the menopause syndrome. Borak[4] in 1929 reviewed the results of the latter treatment in 274 patients, some of whom were observed for 6 years. He reported relief of menopausal symptoms in 80 per cent after irradiation of the pituitary gland, and improvement in the remaining cases after irradiation of the thyroid gland. The relief of symptoms lasted from 6 months to 4 years in 63 per cent, while in 27 per cent the effect lasted less than 6 months. Borak, to effect a sham treatment and to eliminate the psychic factor, interposed a lead screen in a number of cases used as controls. His patients did not improve until they received the regular full course of irradiation. A certain number of cases were followed for 6 years, and no ill effects were noted. Borak[5] stated in 1935 that he had given thousands of pituitary treatments for various reasons to hundreds of patients during the past 10 years without untoward results. Thus, his reports may be cited as an answer to one logical objection to irradiation of an apparently normal pituitary body. Collins and his co-workers[6] reported the findings in 33 patients who had been treated by irradiation of the pituitary body for menopausal symptoms. These patients were in a constant state of discomfort, despite the use of sedatives and, in several cases, of theelin. In 17 patients the menopause was surgically induced, and in 16 patients it was of natural occurrence. Only 1 of the cases, a young woman suffering from a surgical menopause and who was diagnosed as dementia praecox, failed to improve. Reel and Lewis[7] selected 19 patients for irradiation of the pituitary body in whom the outstanding symptom of the menopause was a very severe headache; 14 of the 19 patients showed a marked degree of improvement, while 3 of the 5 remaining cases were improved to some extent.

These enthusiastic reports, together with the good results obtained in the Peter Bent Brigham Hospital in the treatment of neoplasms of the pituitary body by irradiation,[8, 9, 10] prompted us to determine the efficacy of this therapy in a small, carefully followed group of patients.

It has been suggested by Collins and others[6] that the clinical benefits from irradiation of the pituitary body are the result of destructive changes to the anterior lobe with a subsequent decrease in prolan, this decrease being more marked and permanent than is possible with female sex-hormone therapy. He and his co-workers planned to determine the prolan content of the blood and urine both before and after irradiation. However, Borak[5] refers to Blos and Goldhammer, who found that such a decrease did not occur even after the symptoms had been alleviated by irradiation. Reel and Lewis[7] assume that their patients complaining of headache were relieved because of a diminution in the size of the gland, with a resultant decrease of tension within the sella.

A wide variance of opinion exists as to what constitutes sufficient roentgen dosage to the pituitary gland to produce the desired effect. Huett[11] has never failed to obtain relief over a period of 3 years after a dosage of 2,000 r., and no ill effects were noted from this large dosage. Borak[4] gives a dosage of 600 r. and repeats the therapy in 8 days. Reel and Lewis[7] gave 200 kv. at 50 cm. distance, using 0.65 mm. of copper and 1 mm. of aluminum as a filter and an 8 cm. mask. A total of 1,000 r. was given. Collins and his co-workers[6] gave a total series of four exposures, totaling 592 r., to the skin surface. In view of our experience in the treatment of neoplasms of the pituitary region, we believe that the latter dosage is too small to produce destructive changes. Our cases received a total of 1,400 to 1,600 r. skin doses, over a period of 4 days. The technic used was: 200 kv., target-skin distance of 50 cm., filter 2.0 mm. copper plus 1.0 mm. aluminum, circular portals 5 cm. in diameter, and 18 ma., using constant potential valve-rectified apparatus. Approximately 300 r. were delivered to the skin in 9.5 minutes. The average effective wave length was 0.116 angstroms.

We have treated 14 women who complained of varying degrees of discomfort during the menopause. The majority were having severe symptoms. At least one half of these patients had taken various kinds of ovarian preparations and sedatives with little or no benefit. The most accurate method of estimating the severity of the complaints

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was to have the patient tabulate a daily record of the number of hot flashes, since flushing is the commonest symptom associated with the menopause. It occurred in 62.3 per cent of 1,000 women carefully studied during the menopause by the Council of the Medical Women's Federation.[12] Most of our patients selected for treatment complained of insomnia because of the hot flashes, accompanied by marked perspiration. Many patients originally selected for treatment because of the complaint of numerous hot flashes proved upon tabulation to have only a few during a 24-hour period. These were rejected for irradiation therapy. The psychic effect of suggested x-ray treatment was noted in several instances. One patient in particular had 15 flashes a day for a week preceding her appointment for treatment and none on the day of her appointment. Treatment was postponed and she has remained improved since the threatened

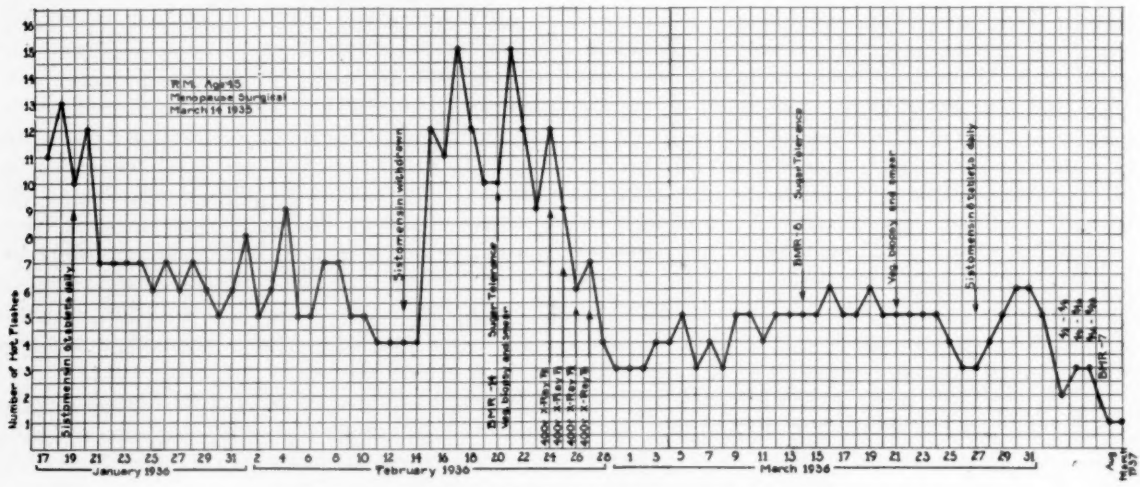

FIG. 1. R. M. This patient responded particularly well to an ovarian preparation (Sistomensin). Note the prompt increase in hot flashes following its withdrawal, and subsequent immediate and prolonged response to pituitary irradiation.

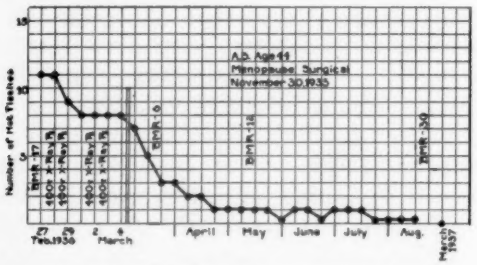

FIG. 2. A. S. This patient was very uncomfortable and could not sleep. There was a prompt and sustained response to irradiation.

therapy. Such experience has naturally made us quite skeptical, as well as careful, in evaluating our results.

The menopause followed surgical castration in 7 patients, roentgen-ray therapy in 4 and application of radium in 1, and was of natural occurrence in the remaining 2 cases. The duration of symptoms before irradiation therapy was instituted varied from 2 months to 8½ years, with 8 patients complaining for less than 1 year. The ages ranged from 29 to 50, with an average age of 42. Of the 14 patients treated at least 9 months to 1 year ago, 5 had a definite and sustained decrease in the number of hot flashes and marked symptomatic improvement (Figs. 1 and 2); 3 other patients stated that they were definitely improved, although by tabulation there was very little if any change in the number of hot flashes (Fig. 3). These cases would have been classed in the group of good results if an accurate account of the hot flashes had not been recorded daily. The remaining patients were not improved subjectively, and the number of hot flashes remained at a preradiation level. In our experience

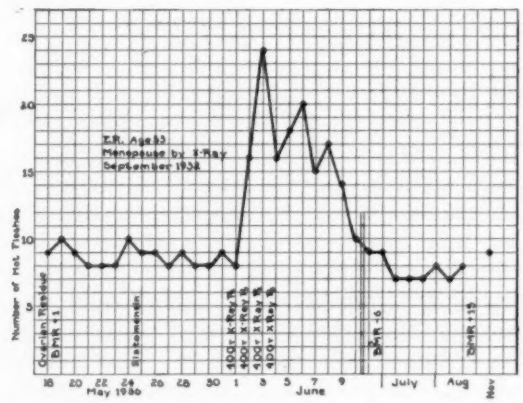

FIG. 3. F. R. Although this patient reported marked improvement from the irradiation, note the great increase in the number of hot flashes when the treatments were instituted. The number of hot flashes, however, soon returned to the preradiation level.

the patients showing definite improvement recorded a fall in the number of hot flashes about the third day of therapy (Figs. 1 and 2). Although a standard of 1,400 to 1,600 r. was

given over a 4-day period, this quick response may be taken as an indication that benefit could be expected from smaller doses, such as 800 r. None of our patients showed a delayed favorable response coming on some days after the treatment had been given.

To rule out the psychic effect of x-ray treatment we gave 3 patients sham therapy. They were placed under the x-ray tube on four successive days and thought they were receiving the regular treatments; 1,600 r. of irradiation were then given 1 month later to 2 patients (Fig. 4) and within 7

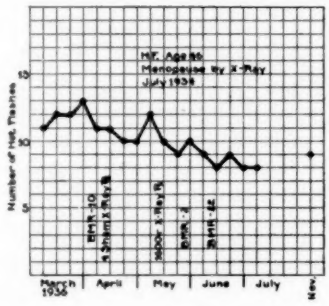

FIG. 4. H. F. This patient received sham treatments in April, 1936, followed a month later by 1,600 r. irradiation. There was no change or improvement after either type of treatment.

days to another patient. Two of these patients reported the hot flashes diminished in intensity but not in number, either after the sham or the actual treatment.

The total number of cases in this series is too small to draw definite conclusions as to what type of patient may be suitable for this therapy. However, it is of interest that 3 of the 5 patients who were definitely improved had had castration by surgery within a year of the onset of treatment. The average age of the improved patients was 36, which is 6 years below the average for the entire group (42 years). Little significance should be attached to the above observation because the cases that failed to show any improvement usually had, we think, a powerful psychic factor, which might well have accounted for their original persistent and severe symptomatology. For example, 1 patient was recently reduced to poverty and her husband had repeated attacks of angina pectoris. She improved for a time after the treatments but became miserable again after he suffered a severe attack. Another patient, an unemployed widow, continued to grieve over the death of her only child. Similar histories were obtainable from several of the other patients who were not improved.

Although the irradiation was primarily directed to the overactive anterior lobe of the pituitary body to affect the gonadotropic hormone, we were anxious to check upon possible damage to the thyrotropic and diabetogenic hormones. For this reason basal metabolic and sugar-tolerance determinations were made before and at intervals after the irradiation.

Definite connection between the pituitary hormones and carbohydrate metabolism has been demonstrated by Houssay and his associates.[13] Ablation of the entire hypophysis in the normal animal gives rise to the production of hypoglycemic crises and, in the pancreatectomized diabetic animal, the alleviation of diabetes. This problem of the diabetogenic and ketogenic hormones of the pituitary has already received the attention of Collip.[14] If irradiation of the pituitary were intense enough to cause marked changes in the gland it might conceivably affect the carbohydrate metabolism of the patient. Perhaps the simplest method of investigating carbohydrate metabolism clinically is that of studying respiratory metabolism following the administration of dextrose. In each instance the patient was given, in a fasting condition, 1 gm. of dextrose per kilo of body weight, and samples of blood were withdrawn every 20 minutes for 2 hours. Simultaneously with these, expired air analyses were carried out by the use of the Tissot spirometer and Haldane-Boothby apparatus. In a few cases insulin was administered intravenously, and subsequent blood-sugar responses noted. As there was no remarkable deviation from the preirradiation studies, the results will be presented in a subsequent communication.[15] In 2 of the cases there was a slight flattening of the sugar-time curve, which was not extreme enough to be more than coincidental.

Biopsies of vaginal mucosa were obtained in 10 patients before and a few weeks after irradiation. The specimens obtained prior to irradiation corresponded in all respects to postmenopausal vaginal mucosa. The stratum germinativum was especially studied for changes. No definite change after irradiation could be found, even in patients showing marked clinical improvement. These specimens were studied with additional vaginal biopsies from 25 control patients.

SUMMARY AND CONCLUSIONS

Fourteen patients suffering from hot flashes associated with the menopause were given 1,600 r. of irradiation to the pituitary body. Although others have reported almost universal improvement, we have noted improvement in only 35 per cent of our cases.

Sham treatments were given to 3 patients to eliminate the psychic effect of therapy. There was no change in the number of hot flashes in these patients during the sham treatment or after intensive irradiation.

There was no definite change in the basal metab-

olism, the majority of the patients having a basal metabolic rate well on the minus side both before and after irradiation.

Sugar-tolerance curves taken before and after treatment showed no material change.

Vaginal biopsies before and after therapy, even with clinical improvement, failed to show any change. The stratum germinativum was especially studied.

Irradiation of the pituitary body in the treatment of the menopause syndrome is not a cure-all for this complaint, although it is beneficial in some instances. The problem for further consideration is the selection of the type of patient who can reasonably be expected to respond to this treatment.

REFERENCES

1. Hofbauer, J.: Ovarialtherapie klimakterischer Toxikodermien. Zentralbl. f. Gynäk. 46:558 (April) 1922.
2. Groedel, F.: Die Röntgenbehandlung klimakterischer Erscheinungen. München. med. Wchnschr. 69:423 (March) 1922.
3. Werner, P.: Über die Beeinflussbarkeit einiger Gynäkologischer Krankheitsbilder durch Röntgenbestrahlung der Hypophysengegend. Zentralbl. f. Gynäk. 47:1260 (Aug.) 1923.
4. Borak, J.: Die Röntgentherapie bei klimakterischen Beschwerden. Strahlentherapie 33:142, 1929.
5. Borak, J.: The treatment of hyperthyroidism by roentgen irradiation of the pituitary gland. Radiology 24:535 (May) 1935.
6. Collins, C. G.; Thomas, E. P., and Menville, L. J.: Irradiation of the pituitary gland in the treatment of menopausal symptoms. Am. J. Obst. & Gynec. 31:115 (Jan.) 1936.
7. Reel, P. J., and Lewis, T. F.: The pituitary as a probable factor in the origin of headaches of the menopause. Ohio State M. J. 33:156 (Feb.) 1937.
8. Cutler, E. C., and Schnitker, M. T.: The clinical aspects of adenomas of the pituitary body. (Personal communication.)
9. Sosman, M. C.: The effect of irradiation of pituitary basophilism (Cushing's syndrome). (Personal communication.)
10. Vaughan, W. W.: The place of irradiation in the treatment of pituitary adenomas. (Personal communication.)
11. Huet, J. A.: La radiothérapie de l'hypophyse curatrice des troubles fonctionnels de la ménopause. 33 observations. Bull. et mém. Soc. de radiol. méd. de France 21:561 (July) 1933.
12. Council of the Medical Women's Federation. An investigation of the menopause in one thousand women. Lancet 1:106 (Jan. 14) 1933.
13. Houssay, B. A.; Biasotti, A., and Dambrosi, R. C.: Glucógeno e hipófisis. Rev. Soc. argent. de biol. 12:185 (July) 1936.
14. Collip, J. B.: Diabetogenic, thyrotropic, adrenotropic and parathyrotropic factors of the pituitary. J. A. M. A. 104:827 (Mar. 9) 1935.
15. Pijoan, M., and Zollinger, R.: Observations on carbohydrate metabolism following irradiation of the pituitary gland. Endocrinology. (In press.)

FIRST SUPPLEMENT TO THE U.S. PHARMACOPOEIA XI

The Pharmacopoeial Convention of 1930 approved the following resolution which had been passed, in substantially the same form, by many preceding U.S.P. Conventions:

> *Supplements*—It is recommended that the Committee of Revision be authorized to prepare supplements to the Pharmacopoeia, or lists of admissions or changes at any time they may deem such action desirable.

Under this authorization the U.S.P. Committee of Revision and Board of Trustees have prepared and published the First Supplement to the U.S.P. XI.

This First Supplement has just been released and will become official on December 1, 1937. It is a booklet of about 100 pages in a substantial binding and may be obtained from the Mack Printing Company, Easton, Pa., from wholesale druggists, or from any other distributor of the U.S.P., at $1.00 per copy, postpaid. In this supplement, all the texts revised to June 1, 1937, are reprinted in full so that there can be no misunderstanding of the authorized changes.

This supplement was prepared under the same careful procedure followed for the original text of the Pharmacopoeia. Each proposed change was carefully investigated by the appropriate subcommittee and submitted for the consideration of the revision committee. The tentative text was then given wide distribution to solicit criticisms and suggestions. A hearing, conducted by members of the Executive Committee, was later arranged and announced, and anyone interested was invited to be present. Following the hearing the members of the Executive Committee held a conference with the officials of the Food and Drug Administration at Washington and then decided upon the text, which was then submitted in full to the members of the Committee of Revision for discussion and approval. Finally the Board of Trustees decided the date of issue for the supplement, also the date when it is to become officially a part of the U.S.P. XI, and the price for which it is to be sold.

American pharmacy may justly be proud of the part it has played for almost a century in co-operation with medicine, in the decennial revisions of the U.S. Pharmacopoeia. The issuance of the First Supplement to the Eleventh Revision inaugurates an advanced program. This makes possible the prompt revision of tests or assays whenever it is found necessary and even the recognition of added therapeutically important substances, if new conditions make such action desirable. This plan will make the Pharmacopoeia more responsive to progress, more serviceable as a technical guide to the health professions, and more dependable as an authority for drugs and medicines under the federal and state pure food and drugs acts.

The fullest support should, therefore, be accorded to this new and forward-looking policy by all who are interested in the Pharmacopoeia. Pharmacists and all other users of the U.S. Pharmacopoeia should promptly supply themselves with copies of the First Supplement to the Eleventh Revision.

MASSACHUSETTS GENERAL HOSPITAL

ANTEMORTEM AND POSTMORTEM RECORDS AS USED IN WEEKLY CLINICOPATHOLOGICAL EXERCISES

FOUNDED BY RICHARD C. CABOT, M.D.

TRACY B. MALLORY, M.D., *Editor*

CASE 23311

PRESENTATION OF CASE

First Admission. A 70-year-old Italian teamster was first admitted complaining of painful swelling of the left foot.

Ten years before entry the patient attended the Out Patient Department because of dizziness and headache. He was found to have a moderate glycosuria, and was treated by dietary restrictions. He was not seen thereafter until a month before entry, when he returned to the clinic because of painful swelling of the left foot recurring intermittently for a period of about a year. The blood pressure was 160/90. A large amount of sugar was found in the urine, the patient's diet was regulated, and he was given 10 units of insulin daily. There were tender swelling and reddening in the region of the first and second toes of the left foot, which were believed to be the result of secondary infection of old fungus disease. Palliative local therapy was prescribed, but the pain increased and an area of black discoloration appeared on the great toe.

The patient had been in the hospital 26 years previously because of renal calculi. There had been no further passage of stones.

Physical examination, as recorded, was essentially negative, except for a 3 cm. area of black discoloration over the medial aspect of the left great toe. The foot was a dusky color and rather cool to the palpating hand. Neither the posterior tibial, dorsalis pedis, nor popliteal pulsations could be felt on either side.

The temperature was 99°F., the pulse 90. The respirations were 20.

Examination of the urine showed a green precipitate with Benedict's test but was otherwise negative. The white cell count was 14,000, and the hemoglobin was 65 per cent. A blood sugar was 144 mg. per cent.

X-ray examination of the left lower leg and ankle showed a marked degree of calcification within the vessels. There was spur formation at the insertion of the plantar fascia and Achilles tendon, but the bones were otherwise negative.

On the day following entry a low thigh amputation of the left leg was performed. The patient responded well postoperatively, and he was discharged on the twenty-sixth hospital day.

Final Admission (3½ years later). Following discharge the patient remained in comparatively good health. He attended the diabetic clinic until a year before entry, but during this interval continued to check his urine and to adhere to a dietary regime. He took 15 units of insulin daily, and in this manner kept his urine fairly consistently sugar-free. About 3 weeks before re-entry to the hospital he noted swelling of his remaining leg, which increased during the day and subsided overnight. Two weeks prior to entry he developed paroxysmal attacks of nocturnal dyspnea, and considerable dyspnea on slight exertion during the day. During the attacks there was no wheezing or chest pain. He developed a cough, however, productive of sticky, dark-colored sputum, which was blood streaked on only two occasions. Three pillows were used for sleeping purposes, a habit to which the patient had been accustomed for many years.

Physical examination showed a well-developed and nourished, moderately dyspneic, elderly man. The pharynx was markedly reddened, and the tonsils were enlarged and cryptic in appearance. Retinal arterioles were tortuous, and there was nicking of the venules. No exudate or hemorrhages were present. The chest was barrel shaped, with limited expansion. The apex impulse was wavy and palpable in the anterior axillary line. There were occasional extrasystoles. The heart sounds were of fair quality. No murmurs were heard. The second aortic sound was louder than the pulmonic. The blood pressure was 110/80. The right chest posteriorly showed dulness to flatness beneath the angle of the scapula. In this region breath sounds and tactile fremitus were absent. A few fine, moist rales were audible just above the area of dulness. The scar of the amputation stump was well healed. There was soft pitting edema of the right foot and leg.

The temperature was 100° F., the pulse 120. The respirations were 30.

Examination of the urine showed a specific gravity of 1.020, with a slight trace of albumin. Benedict's test showed a green precipitate. The sediment contained an occasional white blood cell, a rare red blood cell, and an occasional hyaline cast. The blood showed a red cell count of 4,400,000, with a hemoglobin of 80 per cent. The white cell count was 11,900, 78 per cent polymorphonuclears. A blood Hinton test was negative. The fasting blood sugar was 175 mg. per cent. The nonprotein nitrogen of the blood serum was 16 mg. per cent. An electrocardiogram showed low T_1, T_2, and T_4; T_3 was inverted. The P-R interval was 0.14 seconds. QRS waves showed low voltage.

An x-ray film of the chest showed the heart to be markedly enlarged on both sides without characteristic configuration. The aorta was slightly tortuous. The right diaphragm was obliterated by fluid, which occupied the lower portion of the lung field. Hilar shadows were increased in size.

On the third hospital day a right chest tap produced 800 cc. of straw-colored fluid. The fluid had a specific gravity of 1.010 and contained 150 red blood cells per cu. mm. There were no white blood cells. Despite the thoracentesis and the administration of digitalis and salyrgan, the edema progressed and dyspnea continued. The diabetes was controlled by diet and 5 units of insulin daily. The temperature fluctuated irregularly between 98 and 101° F., and the pulse between 80 and 150. The white cell count of the blood gradually rose to 19,400. His condition became progressively worse, and on the tenth hospital day he developed Cheyne-Stokes breathing and a moderate degree of cyanosis, which were relieved by injections of caffein. Soon afterward he died suddenly without pain or complaint.

Differential Diagnosis

Dr. Allen G. Brailey: This is the history of a 70-year-old teamster, who, some 29 years before admission, was in the hospital with renal calculi; but there was no recurrence of evidence of renal stone, and there is nothing else in the story which leads me to think that the primary difficulty was in his kidneys.

Thirteen years before the final admission he came to the hospital, where he was found to have a mild diabetes. He was put on proper treatment but did not come back, as he undoubtedly was told to do, and very likely ceased to do anything about it after a short time. No more was heard from him until he came to the hospital on the first admission recorded here, with a beginning gangrene of the left foot, and marked arteriosclerosis by x-ray. This is the common complication of long-standing diabetes, and an extremely serious one. In this case it interests me that the diabetes throughout the whole story was exceedingly mild. I wonder if the primary disease so far as these two conditions are concerned was not in the arteries, and if the diabetes was not secondary to disease of the vessels of the pancreas.

The diagnostic problem comes in the last admission. He was getting along well and was considered in good health until 3 weeks before he came to the hospital, when he first had intermittent swelling of the other leg, then a week later nocturnal dyspnea and then dyspnea on exertion. Thereafter he was in the hospital where adequate treatment was administered, in spite of which he went rapidly downhill and died on the tenth day. That is a very rapid course, and I think probably his death was a cardiac death. The question is what sort of lesion could have caused it.

May we see the x-rays?

Dr. Harvey R. Morrison: I cannot add any more than what is in the written report. You can see that the heart is enlarged on both sides and that there is a good deal of fluid in the right chest which was tapped. There is no lateral view to show the aorta. That was evidently seen by fluoroscope.

Dr. Brailey: Is there any suggestion of pericardial fluid?

Dr. Morrison: You cannot tell from that plate. Fluoroscopy would have helped.

Dr. Brailey: The hilar shadows were probably no more than you would expect?

Dr. Morrison: No more than from decompensation.

Dr. Brailey: I think that this man had extensive coronary disease, with repeated infarcts of the heart. He has a very large heart, which would be consistent with such repeated damage to the myocardium. He does not respond to what ordinarily would be effective treatment of early decompensation. He has fever and a moderate degree of leukocytosis and an electrocardiogram which is consistent with, although not insistent upon, the diagnosis of coronary disease.

However, there are a number of things against this diagnosis. In the first place, he never had chest pain, which is usual with infarcts but by no means essential, and I presume that the infarcts are small and might have occurred perfectly well without pain. I wondered about the fluctuation of his temperature from 98 to 101° F. May I see his chart? It was by no means a septic chart, but it is not typical of coronary occlusion. Ordinarily there is a fairly sharp rise to maximum and a fairly steady drop to normal temperature. The chart does not prove that he did not have it. It may be suggestive of more than one infarction.

What are the other possibilities? I think that he might have had myocarditis. I mean by that, the acute inflammatory myocarditis which is a fairly rare condition but which occurs in diphtheria, as everyone knows, and in rheumatic myocarditis and is also rarely found in association with other forms of infection. It is noted that he had a markedly reddened pharynx. It may be that he had a streptococcus infection in his throat, and that this tremendous heart and febrile reaction and rapid pulse are the results of acute infection and acute damage to the myocardium. Pericarditis I think is pretty unlikely. One ordinarily has a marked and early enlargement of the liver with pericarditis with effusion. I would not suppose

that you would see a wavy apex impulse of the heart in the presence of emphysema, even with a heart of this size, if he had effusion. Apparently the service did not think so. I do not believe he had pulmonary heart disease, so-called cor pulmonale. It occurs most commonly in mitral stenosis, acutely after massive pulmonary infarct and rarely in endarteritis obliterans of the pulmonary artery. The heart enlargement was not primarily right sided.

Did he have any other unrelated disease? We have had some peculiar cases of tumor of the heart. It is reported that he had fluid in the chest. Was there any on the left?

Dr. Morrison: Not in that picture, but you really cannot tell.

Dr. Brailey: His fluid appeared to be one sided. They took out 800 cc., but that is certainly common enough in congestive heart failure, presumably from pressure on the azygos vein which interferes with proper emptying of the right intercostal veins. The blood cells I think were due to trauma. The fluid was obviously a transudate. No other cells are reported.

I very likely have left out things that I should have thought of, but my first guess is extensive coronary heart disease of long standing, with fresh and old infarcts, probably many and probably not very big.

Dr. Wyman Richardson: We have seen patients die this kind of death with progressive pulmonary thrombosis beginning from an embolus branching out through many of the smaller arteries; and I would make this my guess in this case.

Dr. Brailey: Where are the emboli coming from?

Dr. Richardson: Just coming; you do not have to have an obvious focus for them.

Dr. Brailey: It is a perfectly good diagnosis. There was no pain, and one would expect pleural pain; but such patients frequently do not have pain, it is true.

Dr. James H. Townsend: These patients with diabetes seem to be rather prone to queer attacks of coronary occlusion, many times with very little pain. I wonder if he did not have a sizable coronary infarction of about 2 or 3 weeks' duration about the time he began to have attacks of nocturnal dyspnea with no definite pain. There seems to have been a fairly sudden onset of symptoms of cardiac failure at that time.

Clinical Diagnoses

Diabetes mellitus, mild.
Arteriosclerotic heart disease.
Congestive failure.
Terminal bronchopneumonia.

Dr. Allen G. Brailey's Diagnoses

Arteriosclerosis, generalized.
Coronary heart disease with cardiac infarction.
Diabetes mellitus.

Anatomic Diagnoses

(Diabetes mellitus.)
Bronchopneumonia, right lower lobe.
Pulmonary emboli, multiple.
Coronary thrombosis, left descending and right circumflex branches, old.
Mural thrombi, right auricle and ventricle.
Cardiac hypertrophy, hypertensive type.
Arteriosclerosis, marked, generalized.
Thromboses, right femoral and left external iliac arteries.
Thrombophlebitis, left external iliac vein.
Hydrothorax, right.
Pleuritis, chronic fibrous, left, focal.
Operative scar: amputation of left leg.
Accessory spleen.
Perisplenitis, chronic, marked.
Cholecystitis, chronic.
Cholelithiasis.
Dilatation of common bile duct.
Nephritis, chronic vascular.
Nephrolithiasis, left.
Ecchymoses, antecubital fossa.

Pathological Discussion

Dr. Tracy B. Mallory: One of the rules that Dr. Cabot used to make and which in his hands always worked pretty well was to try, whenever possible, to explain everything the patient presented on one diagnosis. The rule certainly works in your favor on a percentage basis in individuals under 50 or perhaps under 60. I should say when you have individuals of 70 or more, it probably works against you. The patient of 70 not infrequently turns out to be more or less a complete museum of pathology by himself. This man was rather comforting to anyone faced with the problem of differential diagnosis. He could make almost any diagnosis he wanted and still be right. He did have coronary thrombosis, and he did have pulmonary embolism. The pulmonary emboli were all on the right side and were all pretty recent. There had not been time for frank infarction of the lung to occur. Whether they were all within the last few minutes before death, however, I think is a little improbable. I imagine he had been having them for a day or two, but probably not much longer. There were enough of them in the right lung so that the arteries were almost completely occluded, and I think they were without much question the immediate cause of death. On the other hand, all his major coronary arteries were occluded, and one of the thrombi was quite

fresh. He showed a generalized arteriosclerosis with marked involvement of the vessels of both legs. There were thrombi found in the iliac artery on the left—the side of the amputation—and also the femoral artery on the right. The femoral veins of both legs contained loosely adherent thrombi, and the pulmonary emboli may have come from either of these vessels.

He still had his old renal calculi, and the kidneys showed a typical vascular nephritis such as you would expect. The heart was quite markedly enlarged, 750 gm., and enlargement was probably due to hypertension rather than coronary disease. We do not usually see enlargement to that degree with pure coronary disease. There was no pericarditis.

Another quite unexpected finding was a cholelithiasis and a severe chronic cholecystitis. He also had a little bronchopneumonia.

DR. BRAILEY: What about his pancreas?

DR. MALLORY: It showed rather marked hyaline degeneration of the islands such as you frequently find in severely hypertensive individuals, whether they have diabetes or not.

DR. BRAILEY: You think that the diabetes was on that basis probably?

DR. MALLORY: There is a strong suggestion that it was.

DR. TOWNSEND: Can you tell us whether there is any close correlation in the diabetics that have come to autopsy here between sclerosis of the arteries of the extremities and of the coronaries. In nondiabetics one often finds severe coronary sclerosis but very little in the extremities. In diabetics I have the impression that if they come to the point of gangrene of the extremity they have severe coronary disease, too. One can predict with a good deal of certainty that such individuals will not live long because the coronary disease will prove fatal.

DR. MALLORY: I think there is a good deal of truth in the statement that arteriosclerosis in diabetics is usually more diffuse and generalized than in nondiabetics. One frequently is surprised to see how severe arteriosclerosis can be in a localized area in nondiabetic individuals. With diabetics one can usually assume that there will be a pretty widespread, diffuse arteriosclerosis.

CASE 23312

PRESENTATION OF CASE

A 64-year-old American housewife was admitted complaining of the vomiting of blood.

Five years before entry, without preceding manifestations, the patient suddenly vomited a large quantity of dark material. This was followed by sweating and collapse, and for weeks afterward the patient was quite pale and weak. At this time she was told by a physician that she had pernicious anemia, but a year later another physician said that she did not have pernicious anemia. Subsequently she had several attacks of hematemesis, the last of which occurred 7 weeks preceding entry. At this time there was a moderate amount of bright red blood in the vomitus. X-ray studies were done, and operation was advised. During the succeeding interval iron medication was given by mouth, and she regained much of her strength. There were never any definite gastrointestinal symptoms, abnormal stools, sore tongue or paresthesias. During the year preceding entry she lost about 10 pounds in weight.

Physical examination showed a well-developed and nourished, rather slender woman in no acute discomfort. There was moderate pallor of the skin and mucous membranes. Numerous tiny pigmented nevi were noted over the body. The blood pressure was 150/100. The abdomen was slightly protuberant and tympanitic, but no palpable masses were evident. The remainder of the examination was negative.

Examination of the urine showed a specific gravity of 1.025. The sediment was loaded with white blood cells, many of which were clumped, and occasional red blood cells were seen. The blood Hinton test was negative. The blood showed a red cell count of 4,400,000, with a hemoglobin of 70 per cent. The white cell count was 6,000, 64 per cent polymorphonuclears, 24 per cent lymphocytes, 11 per cent monocytes and 1 per cent eosinophils. There was moderate variation in size and shape of the red blood cells, and the platelets appeared to be increased.

A barium meal showed no abnormality in the esophagus. There was a sharply outlined tumor, about the size and shape of an egg, in the pyloric end of the stomach. The tumor was apparently covered with mucosa, and there was an ulcer measuring about 1 cm. in diameter in its central portion. There were also small, ulcerative areas near its upper pole. The other portions of the stomach showed no abnormality.

On the second hospital day a laparotomy was performed.

DIFFERENTIAL DIAGNOSIS

DR. WILLIAM B. BREED: Her present illness is a very unusual story because of persistent hematemesis over a period of 5 years without gastrointestinal symptoms or abnormal stools. We might just as well attack this case by making a list of some of the causes of hematemesis. We have to consider peptic ulcer, esophageal varices associated with cirrhosis of the liver, polyposis of the stomach, simple gastritis, diaphragmatic hernia and

cancer. These are the more usual causes of hematemesis. I add cancer because one has to add cancer to such a list, but persistent hematemesis is not very common in cancer without other associated symptoms and signs. Moreover, a 5-year period of symptoms due to cancer with no more to show on physical examination than in this particular case would be quite unlikely. Apparently 7 weeks before she came in she had an x-ray and something was found at that time and operation advised.

Physical examination does not help at all. There seems to be moderate pallor of the skin and mucous membranes, so we will be on guard for other evidence of anemia.

FIGURE 1.

The laboratory reports are not of particular help. The only positive thing here is the fact that the sediment was loaded with white blood cells, many of which were clumped, and in which there were occasional red blood cells. I think we cannot attach any significance to that without examination of a catheterized specimen. She has no severe degree of anemia. As a matter of fact, according to the routine here, 70 per cent hemoglobin with the Tallqvist method is within normal limits, and her red cell count is perfectly good for a woman. The differential count is normal.

All that we have to fall back upon is the proper interpretation of the positive x-ray findings, but before we do that it might be well to see how far we can go merely by speculation. It would seem to me that bleeding from a peptic ulcer over this period of time would be unusual without some other symptoms suggesting such a lesion. There is no evidence of cirrhosis, and I should think that bleeding from varices would have proved fatal if it had continued over a period of 5 years. There are no symptoms of gastritis, no evidence of any obstruction or anything to suggest cancer, also there is no history suggesting diaphragmatic hernia. Polyps in her stomach, or something that gives the appearance of polyps, seems to me the most reasonable explanation of all of this.

FIGURE 2.

Let us look at the x-rays (Fig. 1). It is a very large tumor; it does not look like the ordinary benign polyp that we find in the stomach, which is usually smaller. The question comes up as to whether this might be a neurofibroma which gives a polypoid appearance. This small ulcer in the middle of the large tumor is almost pathognomonic of neurofibroma or leiomyoma. Some pathologists call them neurofibromas, others leio-

myomas, of the stomach; but they do ulcerate, they do bleed and they are benign. Of course, we have no evidence of neurofibromas elsewhere in her body, but I understand that one may have a solitary neurofibroma in the stomach without the associated tumors elsewhere as in von Recklinghausen's disease. I should doubt very much if it were malignant, that is, a fibrosarcoma. I should think that they probably operated on this woman and cured her.

PREOPERATIVE DIAGNOSIS

Sarcoma of the stomach.

DR. WILLIAM B. BREED'S DIAGNOSIS

Neurofibroma of the stomach.

ANATOMIC DIAGNOSIS

Neurogenic fibrosarcoma of the stomach.

PATHOLOGICAL DISCUSSION

DR. BENJAMIN CASTLEMAN: I think Dr. Breed has made it appear that the neurofibroma is a very common tumor of the stomach, easy to diagnose, that it is more common than the leiomyoma, and that the pathologist very rarely can distinguish between them. It is true that occasionally we have difficulty in deciding whether a tumor originates from smooth muscle or is neurogenic, especially in the stomach, but as a rule we can be quite definite. The phosphotungstic acid stain usually differentiates the smooth muscle fibrils. In addition, the whorl formation and palisading are quite characteristic of neurogenic tumors. Leiomyomas are much more frequent than neurofibromas. In fact, some pathologists rather assume that all spindle-cell tumors in the stomach are of smooth muscle origin. This differentiation, however, is only academic, because clinically, roentgenologically and surgically, they present the same problem.

The diagnosis without the x-ray is not so easy as Dr. Breed made it. If symptoms are present the only one that is always positive is chronic hematemesis. The x-ray examination if done carefully will show the lesion with its characteristic central ulceration; many of these tumors are quite small and tend to be located in portions of the stomach, such as the cardia, which are difficult to examine.

Here is a photograph of the specimen in this case (Fig. 2). You can see the large, ovoid, flattened submucosal tumor that lies completely within the wall of the stomach. Corresponding with the x-ray appearance is the central ulceration, which is about 1 cm. deep, undoubtedly the source of the hemorrhage. Very often a dimpling of the serosa is present over the tumor. Histologically this tumor shows definite whorl formation and palisading and is, therefore, in keeping with a neurogenic origin. The spindle-shaped cells are somewhat atypical and contain a small number of mitoses, so that an additional diagnosis of sarcoma is warranted. This type of sarcoma, however, rarely gives rise to metastases and is usually cured by excision.

The New England
Journal of Medicine
Formerly the
Boston Medical and Surgical Journal
Established in 1828

Owned by the Massachusetts Medical Society and Published under the Jurisdiction of the Committee on Publications

Official Organ of
The Massachusetts Medical Society
The New Hampshire Medical Society
The Vermont State Medical Society

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Subscription Terms: $6.00 per year in advance, postage paid, for the United States; Canada, $7.04 per year; $8.52 per year for all foreign countries belonging to the Postal Union.

Material for early publication should be received not later than noon on Saturday.

The Journal does not hold itself responsible for statements made by any contributor.

Communications should be addressed to the New England Journal of Medicine, 8 Fenway, Boston, Mass.

VENEREAL DISEASE CONTROL

The recently issued "Proceedings of the Conference on Venereal Disease Control Work" held in Washington last December deserves wide distribution and perusal by all thinking physicians. It not only contains the papers read at this conference and the digests of the various section meetings prepared by the chairmen, but there has been added a report of the prevalence, incidence and trend of syphilis prepared by a committee at the request of the Surgeon General of the Public Health Service. A long list of references and numerous tables of statistical data with reference to syphilis are a part of this committee report. There has been condensed into a relatively small space a great amount of information about the disease. Suggestions as to state and city programs for combating venereal diseases, as well as programs of modern treatment, provide valuable material for the health officer and the practicing physician. Modern follow-up work is outlined, clinical problems are thoroughly discussed, and the matter of public co-operation is presented with emphasis. Of great interest at this time is a convincing presentation of the research necessary to make still further advances in the control of syphilis.

The statistics quoted from Massachusetts indicate that the work of the last twenty years is bearing some fruit. The prevalence rate for early syphilis for the general population has decreased thirty-one per cent from 1927 to 1935, while the rates for all stages have increased, probably owing to better reporting of the disease. Twelve per cent of a group of cardiac cases in 1914 were due to syphilis, while in 1928 the total was only five per cent; the incidence of aneurysms also dropped twenty per cent. The annual first admissions for paresis to state institutions for mental disease and the mortality have also declined, perhaps because of earlier detection and of more adequate treatment of early syphilis. These reports are extremely encouraging and should act as a spur to the physicians of the State to improve these figures. The co-operation of the public, earlier detection and continuous adequate treatment of the infected individual cannot help but alter for the better the present data as submitted in this report.

REFERENCE

Proceedings of the Conference on Venereal Disease Control Work. Published as Supplement No. 3 to Venereal Disease Information, and obtainable from the Superintendent of Documents, Washington, D. C. (price 15 cents).

THE DOCTOR LOOKS AT HEALTH INSURANCE

Frederick L. Hoffman, LL.D., formerly vice-president and statistician of the Prudential Insurance Company and now a consulting statistician, well known to a large proportion of the medical profession, has prepared a pamphlet on compulsory health insurance and disease control that is being distributed through the Public Relations Bureau of the Medical Society of the State of New York. Dr. Hoffman is opposed to compulsory health insurance,—at least in the form in which it has appeared in other countries,—because it encourages public dependence and increases bureaucracy and the burdens of taxation. "But worst of all," according to his thesis, "it lowers the standards of

medical practice, hinders medical progress and brings about the regimentation of the medical profession to virtually the standard of a labor union."

Dr. Hoffman employs the death rate as the ultimate test of skill and attention in medical practice and compares the mortality from certain diseases in Great Britain under the panel system with that from the same causes in this country under a system of fee competition in private practice. Of the twenty-six important causes of death reviewed, the mortality is higher in England and Wales in all but eight; of forty-two causes of death discussed, all but ten are more common in England and Wales than in this country. Likewise with forty-seven diseases, twelve only show a higher rate in this country than in Scotland.

It would seem to the casual analyst, however, that the death rates as thus compared do not of necessity, as Dr. Hoffman claims they do, constitute "the ultimate test of skill and attention in medical practice." Climatic conditions in England vary from those in this country, and in this country they vary greatly in different widely separated localities. The scale and the mode of living differ in the two countries; customs and diets are not identical; the methods and reliability of reporting diseases and deaths may vary. What might really cast light on the situation would be comparative rates in Great Britain before and after the panel system was instituted, and between Great Britain and the United States before the days of compulsory insurance.

There are good arguments against the adoption of compulsory health insurance here, particularly in the forms that it has taken elsewhere. Any compulsory regimented activity is against American tradition, although, if present trends continue, that tradition will soon become a memory. Compulsory insurance as planned and administered by the state has apparently almost inevitably resulted elsewhere in a disastrous lowering of the standards of medical practice. It is apparent, however, that changes designed to lower the costs of medical care to people of limited means are on their way, as changes have come or are coming in practically all of the other important activities of life.

The question that confronts the medical profession is not whether any change from the old methods shall be acceptable, but whether, through our intellectual and enlightened leadership, the change that does come shall be to our liking and advantage and for the benefit of the public, which in the long run is going to get what it thinks that it wants and needs. The medical profession should decide whether the public gets what it really wants or only what it thinks it wants.

MASSACHUSETTS MEDICAL SOCIETY

COMMITTEE ON ETHICS AND DISCIPLINE

A perennial problem which disturbs the best men in both the medical and legal professions is that of expert testimony by physicians. To this might be added the broader question of the behavior of physicians in relation to cases which ultimately reach the courts for the adjudication of some dispute. These matters have received much attention; however, as might be expected, but little can be done to ameliorate existing abuses except to promote the observance of the highest principles of ethics by all persons concerned. The subject is too complicated for extended discussion here but it may be interesting to the fellows of the Massachusetts Medical Society to know that their Committee on Ethics and Discipline deals to the best of its ability with these problems whenever they are brought to its attention. Not long ago, for instance, one of our fellows was complained of as having given expert testimony for the defendant in a criminal case which was evidently not in accord with the generally accepted facts of the medical sciences and which undoubtedly tended to discourage rather than to promote the securing of a just verdict. The defendant—obviously guilty—was acquitted. This fellow was called to a conference with the Committee on Ethics and Discipline, as a result of which he resigned from the Society.

A recent case that came before the committee serves to illustrate so many things which a physician should not do that it may be useful briefly to recount its salient features. A fellow of the Society, Dr. X, was asked by a lawyer, whom he scarcely knew either personally or by reputation, to examine a client and to make a report. He visited the client and found that he was a patient recently discharged from private care in a neighboring hospital. He had been the victim of an automobile accident, had been operated on by a consulting surgeon of the hospital, and had been sent home with his leg in a plaster mold, with instructions to return at a certain time for further advice. Dr. X made no effort to find out anything about the previous treatment or by whom it had been carried out. He examined the patient, advised further treatment and suggested the name

of another physician living near by, as a man who might be available to carry it on. He made no effort to find out from the lawyer the nature of the case from a legal point of view—whether there might be any prospect of action for tort, malpractice or other cause. He made a written report to the lawyer and six months later was called to testify. Still, according to his statement, he made no inquiry about the nature of the issue. In court he gleaned from the testimony of the consulting surgeon, Dr. Y, who had operated on the patient, that Dr. Y was suing for the recovery of a moderate fee, after having learned that the patient had received substantial damages for the accident. Dr. X was placed on the stand by the lawyer for the defense and in answering the usual questions intended to qualify him as a surgeon of experience he made statements about positions and appointments which he held and medical societies to which he belonged that stretched the truth quite to the breaking point and in two instances were actual falsehoods. The latter, made under oath, really constituted perjury, but he claimed they were made through inadvertence. Having been thus qualified, he testified that the operation performed by Dr. Y was unnecessary at that time—a statement which clearly tended to disparage the services of Dr. Y and created the impression that the charge for his services was unjustified.

Dr. X was called before the Committee on Ethics and Discipline for a hearing. It was amply clear that Dr. X had committed three major offenses: in examining and advising treatment for a patient of another physician without obtaining the latter's consent, in giving false testimony about his own qualifications tending to increase his prestige as a witness, and in giving testimony disparaging to the professional services of a brother practitioner. As thus baldly stated, his actions seem inexcusable and deserving of the severest penalty. There were, however, some extenuating circumstances, among which was the ethically unprofessional conduct of the lawyer by whom he was employed. Dr. X apologized without reservation to the Society through the committee. The committee showed, it is to be hoped, a justifiable leniency in not bringing him before a board of trial with a view to expulsion, but rather asking the President to give him the severest possible admonition and to require him to make an apology, without reservation, to Dr. Y.

The committee believes that it may be useful that the Society at large shall know that cognizance is being taken of unethical behavior of physicians in court.

SECTION OF OBSTETRICS AND GYNECOLOGY

M. Fletcher Eades, M.D., *Secretary,*
19 Bay State Road,
Boston, Mass.

Case History No. 31. Bleeding at Five and One-Half Months

Mrs. J. D., white, aged 41 years, was admitted to the hospital July 6, 1934, because of vaginal bleeding for 3 days. She missed her regular period December 31, 1933, and except for slight nausea had had no other symptoms of pregnancy. She noticed quickening at 4½ months but on June 6 and thereafter she failed to notice any fetal motion. At this time her physician examined her and could not hear the fetal heart. He stated that the uterus was 5½ months pregnant, and advised no interference. The patient continued without symptoms for a month. July 6, at 5 a. m., the patient noted the appearance of some bright red and brownish vaginal discharge. She used three pads during the day. The following day the flow became brighter, and eight to twelve pads were used. She was then referred to the hospital by her physician.

The family history was negative for tuberculosis, diabetes, malignancy and hemorrhagic or venereal diseases. The past history consisted of measles and mumps in childhood. There had been no serious medical diseases or operations. Her menstrual periods started at 13 years and had always occurred in 28-day cycles. There had been six full-term normal pregnancies, the first two deliveries by low forceps, the others by normal delivery.

Physical examination showed a middle-aged, well-nourished white woman who showed slight pallor of the mucous membranes. The eyes, ears, nose and throat presented no abnormality. The teeth were in poor condition, several missing and many carious. The heart sounds were regular; no murmurs or gross enlargement was made out. The lungs were resonant throughout. The abdomen was soft. At the level of the umbilicus in the mid-line was a soft globular symmetrical tumor consistent in size with a pregnant uterus of 5½ months. No fetal heart was heard on auscultation. There was no spasm or localized areas of tenderness. On inspection of the vagina there was a steady flow of bright red blood. The patient did not complain of pain or abdominal cramps. The extremities and reflexes were normal.

On admission her temperature was 98° F. The

A series of selected case histories by members of the section will be published weekly.

Comments and questions by subscribers are solicited and will be discussed by members of the section.

pulse was 92, and respirations 18. Her blood pressure was 118, systolic, and 78, diastolic. The blood showed a red cell count of 3,280,000, with a hemoglobin of 65 per cent (Sahli). A blood Wassermann was negative. Urinalysis was negative. Two compatible donors were obtained.

Because of persistent and moderately profuse flow the patient was examined under aseptic precautions with nitrous-oxide-oxygen anesthesia. The introitus was very relaxed with a third degree cystocele and a second degree rectocele. The cervix was firm but readily admitted one finger through the internal os. Bimanual examination revealed no masses in the vaults; the uterus was 5½ months in size. On inserting the index finger through the internal os no evidence of placenta previa was made out. Flowing continued as above. The membranes were ruptured artificially with the loss of a small amount of dark, foul-smelling amniotic fluid. Because of the tight, firm cervix a No. 4 Voorhees's bag was inserted, and a 2-pound weight attached. The bag was expelled after 10½ hours of labor. On examination the cervix was found to be thick, and the os was dilated only 3 cm. Under nitrous-oxide-oxygen anesthesia a Braxton Hicks version was performed, namely, one foot was delivered through the cervix. Within 2 hours a macerated nonviable male fetus was delivered spontaneously. The placenta, grossly normal, followed the fetus and showed adherent dark clots over approximately one half the maternal surface. The vessels of the umbilical cord were thrombosed, and the fetal surface of the placenta showed evidences of maceration. Grossly, no cause of fetal death was found. Pathological examination of the fetus showed no abnormalities, but satisfactory examination was impossible because of autolysis. The mother had an uneventful afebrile convalescence and was discharged home on the twelfth day postpartum.

Comment. The vaginal bleeding in this case was undoubtedly caused by partial or complete separation of the placenta a month after the intrauterine death of the fetus. The more usual course in this type of case is spontaneous labor with the expulsion of the fetus. In this particular instance treatment was first directed toward controlling the hemorrhage, and secondly the induction of labor. The Voorhees's bag was used primarily to induce labor. The artificial rupture of the membranes in order to allow the uterus to contract tightly about the fetus was considered an essential part of the treatment in the control of the intrauterine hemorrhage. Converting the presentation to a footling in nonviable or dead fetuses usually facilitates their expulsion. The after-coming head can be perforated readily if there is any difficulty with delivery.

MISCELLANY

CONNECTICUT NEWS

Middletown Plans Full-Time Health Service

Under the leadership of progressive local citizens, the city of Middletown has secured a change in its charter providing for the formation of a full-time health department. In accordance with the act which passed the General Assembly during the present session, Mayor Michael A. Brown has appointed as members of the new board of health—James Murphy, M.D., Edgar F. Fauver, M.D., Louis Loffredo, M.D., Mr. John F. Pickett, Rev. Herbert D. Rollason, Mr. Charles Schaefer and Mr. George A. Tierney. At the first meeting, Dr. Murphy was elected chairman of the board.

Health Exhibit at State Medical Convention

A health exhibit was presented by the State Department of Health at the annual meeting of the Connecticut State Medical Society at Bridgeport, May 19 and 20.

Those public health activities in which physicians take a co-operative part were presented. Laboratory technic demonstrating the Neufeld method in pneumonia diagnosis was shown, and the needed supplementary blood cultures and agglutination tests indicated, as well as the serums for typing.

Slides demonstrating the smear examination for gonococcal infection were set up, and the further tests—culture and complement fixation—needed to give complete service, if funds were available, were indicated.

Keen interest was shown in dark-field examination for syphilis, and the living organisms were shown under the microscope.

In constant use during the two days was the moving picture film of the Kline test, adopted as a standard test July 1 by the Bureau of Laboratories.

Also of keen interest was the exhibit case of narcotics and paraphernalia confiscated in the State as a result of narcotic control activities. Other activities on display of interest to physicians concerned well-child conferences, occupational disease control and the reporting of vital statistics.

In the booth set aside for the State Tumor Committee, charts, graphs and statistical maps were on display showing some of the results of the Division of Cancer Research.

Results of Five-Year Survey in Arsenal School, Hartford

Improvement of sections in which negro residents live, better diets for all children in the low-income group, and an educational and health program for children, all are recommended by the Diagnostic and Research Committee of the Hartford Tuberculosis and Public Health Society in a report made recently.

The report, based on a five-year survey at the Arsenal School, suggests that some organization should supervise all positive reactors to the tuberculin test and that active contacts should be located and put under treatment. In 1932, the report points out, 3,018 pupils from all grades of the Arsenal School were given tests. Of these, 24 per cent were positive reactors. X-rays were taken of 600 pupils, and repeated yearly. Tuberculous infection developed in 106 after the start of the survey.

Sanatorium treatment was given 33 children. Of this number, 27 were Negroes and 6 were Whites. Three had adult tuberculosis, and the remainder, forms of childhood

tuberculosis. The committee states that a health education program should be a part of the curriculum of the schools, and that a leisure-time program for physical education should be provided in both the summer and winter.

The tuberculosis survey at the Arsenal School was financed entirely by the Hartford Tuberculosis and Public Health Society and was carried on to determine the incidence of tuberculous infection, the source of infection and a program of prevention and to prevent the development of tuberculosis in the adolescent.

FIFTH INTERNATIONAL CONGRESS OF RADIOLOGY

Simultaneous projection of pictures and text in three languages will be an unusual feature of a gathering of leading physicians and physicists of the world in Chicago this September, according to Dr. Arthur C. Christie, Washington, D. C., president of the Fifth International Congress of Radiology. Whatever the speaker's language, translation of his paper will be thrown on the screens in English, French and German so that practically everyone attending the Congress will be able to understand it, he said.

"Most of the European scientists are at least bilingual," explained Dr. Christie, "but many United States physicians who will attend are not sufficiently conversant with more than English to comprehend many of the papers that will be read. By translating every speech into English, French and German, we believe that nearly everyone will receive the benefit of understanding the more than 250 speakers who will read scientific papers during the five-day meeting here September 13 to 17."

It will be the first International Congress ever held in the United States, Dr. Christie added, and will mark the forty-second year since Dr. William Conrad Roentgen discovered x-rays, and the thirty-ninth year since the Curies discovered radium. The vast progress made in development of the medical and other uses of these two boons to mankind will be portrayed during the Congress, not only through the scientific papers and discussions, but in actual graphic exhibits.

The Congress will be held at the Palmer House, Chicago, and more than 12,000 square feet of floor space will be devoted to an extensive scientific exhibit to be arranged by scores of hospitals and research laboratories throughout the world. Over 20,000 square feet will be devoted to commercial exhibits, showing the latest equipment manufactured by leaders in the field, ranging from x-ray negatives to models of million volt therapy apparatus.

A "short-term" medical school will be conducted during the Congress, said Dr. Christie. Eminent leaders in the field of radiology will conduct short courses during the Congress for the benefit of delegates who will attend from all parts of the world. All of the United States' related societies, including the Radiological Society of North America, American Roentgen Ray Society, American College of Radiology, and American Radium Society, will hold their joint annual conventions during the Congress and will elect officers. At least 500 foreign delegates are expected from 30 different countries, and over 2,000 American physicians will attend. Physicians in other branches of medicine may attend the Congress, according to Dr. B. H. Orndoff, 2561 North Clark Street, general secretary.

Included among the outstanding scientists of the world who will be present at the meeting are: Dr. Gosta Forssell, of Stockholm; Dr. Antoine Beclere, of Paris; Dr. Tamotsu Watanabe, of Osaka, Japan; Dr. H. Tellez-Plasencia, of Santander, Spain; Dr. Russell Reynolds, of London; Dr. William D. Coolidge, of Schenectady; Dr. C. Thurstan Holland, of Liverpool; Dr. George E. Pfahler, of Philadelphia; Dr. Francis Carter Wood and Dr. James Ewing, of New York; and Dr. William J. Mayo, of Rochester.

RÉSUMÉ OF COMMUNICABLE DISEASES IN MASSACHUSETTS FOR JUNE, 1937

Diseases	June 1937	June 1936	Five-Year Average*
Anterior Poliomyelitis	6	6	4
Chickenpox	1512	893	1015
Diphtheria	15	18	65
Dog Bite	1385	1330	1087
German Measles	153	684	1364
Gonorrhea	472	406	577
Lobar Pneumonia	248	341	250
Measles	2356	4066	3045
Meningococcus Meningitis	13	15	7
Mumps	463	1232	725
Scarlet Fever	726	721	922
Syphilis	511	423	417
Tuberculosis, Pulmonary	331	254	308
Tuberculosis, Other Forms	39	48	37
Typhoid Fever	5	12	9
Undulant Fever	5	1	2
Whooping Cough	996	390	623

*Based on figures for preceding five years.

RARE DISEASES

Anterior poliomyelitis was reported from Everett, 1; Fall River, 1; Lynn, 1; Melrose, 1; Montague, 1; Newton, 1; total, 6.

Anthrax was reported from Saugus, 1; Winchester, 1; total, 2.

Diphtheria was reported from Boston, 1; Fall River, 1; Lynn, 1; Malden, 1; Medford, 1; Melrose, 1; New Bedford, 2; Salem, 1; Sheffield, 1; Somerville, 2; Waltham, 1; Worcester, 2; total, 15.

Dysentery, bacillary, was reported from Fall River, 1.

Encephalitis lethargica was reported from Medford, 1.

Meningococcus meningitis was reported from Boston, 2; Chicopee, 1; Everett, 1; Leominster, 1; Milford, 1; Natick, 1; Newton, 1; Southbridge, 1; Wellesley, 1; Westport, 1; Whitman, 1; Wrentham, 1; total, 13.

Paratyphoid "B" was reported from Billerica, 1; Boston, 7; Brookline, 7; Deerfield, 3; Dracut, 1; Everett, 1; Greenfield, 1; Holyoke, 1; Lawrence, 2; Leominster, 1; Lowell, 5; Lynn, 5; Marblehead, 2; Medford, 1; Melrose, 2; Natick, 1; Needham, 1; Quincy, 3; Reading, 1; Revere, 1; Wellesley, 1; Weymouth, 2; Winchester, 1; total, 51.

Pellagra was reported from Boston, 1; Cambridge, 1; total, 2.

Septic sore throat was reported from Boston, 3; Gardner, 1; Greenfield, 1; Lowell, 1; Revere, 1; Topsfield, 1; total, 8.

Tetanus was reported from Boston, 1; Chelsea, 1; Great Barrington, 1; total, 3.

Trachoma was reported from Worcester, 1.

Trichinosis was reported from Boston, 1.

Typhoid fever was reported from Cambridge, 1; Chicopee, 1; Franklin, 1; Lowell, 1; Northampton, 1; total, 5.

Undulant fever was reported from Beverly 1; Franklin, 1; Haverhill, 1; Holyoke, 1; Pittsfield, 1; total, 5.

The incidence of anterior poliomyelitis although slightly above the five-year mean was not large enough to be of prognostic value.

Diphtheria continued to show record low incidence for the ninth consecutive month.

For the first time this year, monthly incidence of lobar pneumonia fell below the five-year mean.

Incidence of meningococcus meningitis continued above the five-year mean.

Typhoid fever continued its record low incidence, both for June and any year to date.

The reported cases of tuberculosis, both pulmonary and other forms, were not remarkable.

The incidences of measles, mumps, scarlet fever, and German measles continued below the five-year average.

The figures for chickenpox and whooping cough showed the highest incidence ever recorded, both for the month of June and this year to date.

The incidence of undulant fever was the highest ever recorded for June.

Paratyphoid continued its record high incidence. Almost all the cases can be accounted for by the outbreaks at Simmons College and at Deerfield Academy.

Although the reported incidence of animal rabies for June was not remarkable, the total number of cases reported for this year to date exceeds that for last year. Foci were most noticeable in the Northern Metropolitan area, North Shore, Lowell and vicinity. New foci have arisen in Spencer, Northborough, Bolton, Ayer, Franklin, Attleboro, Ashland, Lexington and Groveland.

CORRESPONDENCE

THE COMMONWEALTH OF MASSACHUSETTS

BOARD OF REGISTRATION IN MEDICINE

To the Editor: This is to inform you that at the meeting of the Board of Registration in Medicine held July 15, 1937, it was voted to restore the certificates of registration of Dr. Hans W. Bencker, 409 South Huntington Avenue, Boston, as of August 1, 1937, and of Dr. William H. H. Briggs, 73 Kingsbury Avenue, Haverhill.

STEPHEN RUSHMORE, M.D., *Secretary.*

State House, Boston.

EWELME CHURCH AND SIR WILLIAM OSLER

To the Editor: Among Osler's finest associations in Oxford were the church and almshouse at Ewelme, which stand on the edge of a hill, fourteen miles away, overlooking a valley scooped out of the lower slopes of the Chilterns. As Regius Professor of Medicine he was Master of the almshouse, as were all his predecessors since 1617. The present rector of the church writes: "Of the many distinguished men who have held the position, none can ever have done so much for Ewelme and been so loved by its people as he." Osler often sojourned in the Master's rooms which adjoin the church and there he rescued the neglected Ewelme "Muniments," valuable historical documents going back to 1359, which he had restored and "returned to their proper quarters." The church, begun in 1432, was completed by William de la Pole, first Duke of Suffolk, and Alice, his wife, granddaughter of Geoffrey Chaucer, the poet. Among the treasures of the church are the magnificent alabaster tombs of Alice, first Duchess of Suffolk, and of her father, Thomas Chaucer. Lady Osler, too, took a great interest in Ewelme, and after her death a tablet was set in the wall of the church in memory of Sir William, Lady Osler and their son, Revere, the latter having died as the result of wounds received while on active service in the Great War.

It is the superb roof of this church, severely damaged by the death-watch beetle, which needs immediate restoration, and for this purpose an appeal for funds has been made. The undersigned feel that an object so close to Osler's heart as the Ewelme church should not go unsupported by his Canadian and American friends. Thus a fund has been set up, to be known as The Osler Ewelme Fund, to aid in the restoration of the church roof. Lady Osler's sister, Mrs. Henry B. Chapin, care of Kidder, Peabody & Co., 115 Devonshire Street, Boston, Mass., has kindly consented to receive contributions.

HARVEY CUSHING, New Haven,
ARCHIBALD MALLOCH, New York,
JOHN F. FULTON, New Haven,
HENRY R. VIETS, Boston.

RECENT DEATH

HANIGAN—ROSCOE S. K. HANIGAN, M.D., died July 30 at his home, 20 Wollaston Avenue, Wollaston, after an illness of several years.

Dr. Hanigan was born in East Prospect, Pennsylvania, and came here shortly after graduating from the University of Maryland School of Medicine in 1916. During the World War he served with the 115th infantry of the 29th division medical corps.

He was a member of the Massachusetts Medical Society and several fraternal orders in Quincy.

His widow, Mrs. Irene C. Hanigan, four children, a brother and two sisters survive him.

REPORTS OF MEETINGS

HARVEY CUSHING SOCIETY

The sixth annual meeting of the Harvey Cushing Society was held in Philadelphia on May 6, 7 and 8. There was a large attendance. Mr. Geoffrey Jefferson of Queen Square, London, was guest of honor.

Various neurosurgical, roentgenologic and neurophysiologic clinics were held at Temple University by Dr. Temple Fay, Dr. W. E. Chamberlain, and Dr. Ernest Spiegel. Demonstrations were also given at the University of Pennsylvania by members of the Johnson Research Foundation. Dr. D. W. Bronk showed the rhythmic activity of the cortex induced by electrical stimulation, and synaptic transmission in sympathetic ganglia. Dr. Francis Grant discussed the results of surgical treatment of trigeminal neuralgia, and Dr. B. Alpers and Dr. E. P. Pendergrass, the effects of radiation on gliomas.

At Temple University Dr. Chevalier Jackson spoke to the society on "Observations on the End Results of Recurrent Laryngeal Nerve Anastomosis"; and Dr. John Kolmer on "Immunity and Vaccination Against Infantile Paralysis."

Papers by members of the society included the following:—Dr. John Fulton: "Cerebral Regulation of Autonomic Function"; Dr. W. P. VanWagenen and Dr. Roland Bellows: "Diabetes Insipidus"; Dr. Richard Brickner and Mr. Royal Grant: "A New Principle in the Treatment of Inaccessible Tumors and Abscesses: an Experimental Study"; Dr. Richard Light: "Design for a Cerebellar Headrest Based on the Centers of Curvature of the Neck"; Dr. Franklin Jelsma: "Schuller-Christian's Disease"; Dr. J. G. Lyerly: "Meningioma of the Lateral Ventricles"; Dr. Ernest Spiegel: "Experimental Production of Convulsions"; Dr. Tracy Putnam and Dr. Donald Munro: "The Progressive Anoxic Syndrome in Cases of Injury to the Cervical Cord and of Intercostal Polyneuritis"; Dr. Frederic Schreiber: "Clinical Aspects of Cerebral Anoxia"; Dr.

Ralph Cloward and Dr. Paul Bucy: "Spinal Extradural Cysts and Their Relation to Kyphosis Dorsalis Juvenilis"; Dr. Frank Teachenor: "A Case of Extradural Spinal Cyst Associated with Spinal Epiphysitis"; Dr. Temple Fay: "Progressive Ascending Spinal Paralysis (Spiller's Syndrome)"; and Dr. James Watts and Dr. Walter Freeman: "Improvement of Certain Mental Symptoms by Prefrontal Lobotomy." Motion pictures illustrating the results of thermocoagulation of the premotor area in a case of athetosis were presented by Dr. F. L. Reichert.

A whole day was devoted to a symposium on head injuries, including a demonstration of cerebral hydrodynamics with a glass model by Dr. Chamberlain, followed by a series of papers on the treatment of depressed fractures, extradural hemorrhage, subarachnoid hemorrhage, chronic subdural hematoma, and surgical treatment of acute cases of cerebral trauma. Lesions of the optic chiasm and neuro-ophthalmologic diagnosis in cases of cerebral trauma were also described. Remarks on the posttraumatic syndrome and prognosis completed the formal reports. There was a general round-table discussion in which members freely described their experiences with various methods of treatment. Because of the importance of the subject, it was decided to include its further consideration at the next meeting of the society.

At the annual dinner held at the Hotel Warwick, Dr. Kenneth McKenzie gave the Presidential Address. His subject was: "Bermuda; the American Revolution; Philadelphia and Dehydration." Mr. Jefferson extended greetings from the Society of British Neurological Surgeons, and messages were read from Dr. Harvey Cushing and Dr. Ernest Sachs.

The following officers were elected for the coming year: president—Dr. Temple Fay, Philadelphia; vice-president—Dr. F. L. Reichert, San Francisco; secretary and treasurer—Dr. Louise Eisenhardt, New Haven; corresponding member—Mr. Geoffrey Jefferson, London.

The meeting next year is to be held in Memphis, Tennessee.

NORFOLK DISTRICT MEDICAL SOCIETY

A meeting of the Norfolk District Medical Society was held March 30 at the New England Deaconess Hospital. The president, Dr. Maurice Gerstein, turned the meeting over to Dr. Elliott P. Joslin, who introduced the various speakers and commented upon each talk, emphasizing the important points by demonstrations and concrete examples.

The following topics were discussed by Dr. Howard F. Root:

THE EXTENSION OF THE USE OF INSULIN IN DIABETES

As a result of insulin treatment the average diabetic now lives 11 years, or three times longer than formerly. The extension of the use of insulin is the important factor in the early treatment of diabetes. It is those with a mild form of diabetes who should be taking protamine-zinc insulin, even though their urine may be sugar-free part of the time. The secret of this extension is in the hands of the physician, who must persuade the patient to take insulin early in the course of the disease.

The old method was to give 10 units of insulin in the morning and none at night; we now give 20 units in the morning and 14 at night. For diabetics with acute infections, however, variable doses are administered according to the sugar content of the urine. Thus a diabetic with pneumonia is treated as if she had a gangrenous foot.

For the instruction of the nurse the following fraction has been proposed:

R	O	Y	Y-G
20	15	10	5

The letters in the numerator represent the color reaction of the urine, and the corresponding numbers in the denominator represent the dosage of insulin to be given in each case.

DIABETIC COMA

A young Italian woman was brought to the New England Deaconess Hospital recently in an unconscious state and with soft eyeballs. She was a diabetic, and her condition had been accurately diagnosed by her family doctor as that of coma. The patient presented the characteristic symptoms of dyspnea, dehydration and low body temperature. Chemically, we found that there was no diacetic acid in the urine. However, experience has taught that when little diacetic acid is found in the urine one must beware, for in a few hours the patient may be beyond aid. Five liters of salt solution were injected subcutaneously, a gastric lavage was performed, and 400 units of insulin were administered. The patient recovered and returned home.

In the 338 cases of diabetic coma treated here since insulin therapy was begun, there have been 40 deaths. Failure has been due, in many cases, to the complications of other pathologic lesions.

The following topics were discussed by Dr. Alexander Marble:

PROTAMINE-ZINC INSULIN

A middle-aged female patient was presented who had the distinction of having received the first dose of insulin given in this hospital (1922). As the patient was very reliable she was transferred to protamine-zinc insulin, and now does well on 34 units of protamine daily.

In a small group of patients,—some 5 per cent of the total,—protamine presents certain disadvantages. Thus some patients who feel comfortable on a high blood sugar level with insulin may develop reactions when the blood sugar level is lowered by protamine. Sometimes with these diabetics it takes a long time to regulate the dosage and to accustom them to protamine.

INSULIN REACTIONS

Insulin reactions may be due to too much insulin, too little food, or overexercise. The symptoms of the average cases are well known; they include sweating, nervousness, tachycardia, tingling sensations and a staggering gait. Although advising patients concerning symptoms is sometimes carried to extreme, they must be told of them, so that they may be warned of the approach of danger.

With protamine insulin the patient may experience nausea, vomiting and occipital headaches. Aside from these untoward symptoms, the symptoms of protamine insulin shock are the same as those of insulin shock. The treatment necessary to anticipate the reaction may, however, be different. At night, food should be given which requires digestion, so that sugar will be filtered into the blood slowly.

THE AID OF THE LABORATORY

The laboratory is indispensable in the diagnosis and treatment of diabetes, and furnishes reliable guides and indices to the progress of the disease. We hope, therefore, that laboratories will be established in all medical centers. It has been estimated that a laboratory fully equipped, ex-

cept for a microscope, to make all the necessary tests can be equipped for $200.

The following topic was discussed by Dr. Allen P. Joslin:

HOSPITALIZATION OF THE DIABETIC

Let us assume that we have a patient who is doing well on insulin in conjunction with the exercise that he takes in his daily work, but who desires protamine insulin. It usually requires only 4 days of hospitalization to make the change from regular insulin to protamine. When he leaves the hospital, this diabetic will be taking daily 4 to 6 units of regular insulin, plus 30 to 40 units of protamine insulin, plus 160 grams of carbohydrate in his food.

Most important in order to avoid complications in the treatment of diabetes is the education of the patient to regularity. Diet, exercise, and insulin are the three factors the regularity of which is emphasized at the hospital. Here also the patients are given routine dental care, chiropodist treatment and private instruction by nurses. It is desirable to keep them in the hospital awhile, if only to see less fortunate diabetics, that they may thus become zealous in caring for themselves.

The following topic was discussed by Miss Crabiel:

SURGICAL DIABETES

In the care of surgical cases of diabetes many precautions are observed. In order to eliminate bed sores, rubber draw-sheets are removed from the beds. The patients are turned over every 2 hours. A hair pillow is used for the heels to decrease pressure. The feet are rubbed daily with lanolin, particularly the heels when they show evidence of inflammation. Hand-rests are suspended above the bed to aid the patient in turning. A wire loop is placed at the end of the bed to prevent the pressure of bedclothes on the legs. A 10-minute cycle of exercise is carried out daily, three or four times, by means of a Buerger's board at the foot of the bed.

A bed with all these appurtenances was demonstrated by Miss Crabiel.

The following three cases illustrating the efficacy of protamine insulin were briefly described by Dr. Elliott P. Joslin:

Case 1. An intelligent young colored man was found to have diacetic acid in his urine. At the moment there were no available beds in the hospital, so he was given 10 units of protamine insulin and sent home. This procedure was repeated daily, and at the end of 4 days it was found that his blood sugar had come down to normal. The patient has continued to take protamine and has been working steadily since.

Case 2. A middle-aged woman with 8 per cent sugar in her urine was admitted to the hospital and put on a daily dosage of 16 units of insulin. She soon returned to normal, and as she was reliable was transferred to protamine. She now does well on 12 units of protamine every morning.

Case 3. The day before entry this patient had drunk 32 glassfuls of water, and the sugar in her urine the following day would have weighed 500 gm. She was given protamine insulin, and in 16 days her sugar had dropped to 4 gm. She is now taking 12 units of protamine daily and is sugar-free.

The following topics were discussed by Dr. Priscilla White:

THE PREVENTION OF DIABETES

That the potentiality for diabetes is inherited is indicated by the following four facts: (1) the simultaneous occurrence of diabetes in similar twins; (2) the greater incidence of diabetes in the relatives of diabetics than in a control population; (3) the demonstration that this potentiality is a mendelian recessive characteristic in a series of patients selected at random and (4) presumably latent diabetics.

We believe that diabetes is transmitted by a single recessive diabetic gene. Accordingly, all the children of two diabetics should eventually develop the disease, 50 per cent of the children of diabetics and carriers, and 25 per cent of the children of two carriers. Applying the proper correction factor to these values we expect 100, 40 and 16 per cent, respectively. Actually we should not expect to attain these figures, in view of the fact that large numbers of predestined diabetics are killed in accidents or are carried off by infectious diseases and other causes. The data we have compiled concerning these three different combinations give values of 24, 10 and 4 per cent, respectively; in other words, one fourth of the theoretical number was obtained in each case.

We conclude from these results that the characteristic of the gene is the most important factor controlling diabetes. Therefore, diabetics should not marry diabetics, and the relatives of diabetics should not intermarry. Since 25 per cent of the population are hereditary carriers, we believe that the sterilization of diabetics is impractical.

PROTAMINE INSULIN

The insulin treatment of diabetes has certain defects. The insulin cannot be taken orally; it is not a cure for the disease; and many injections are required per day to keep the blood sugar at a normal level. Dr. H. C. Hagedorn and his co-workers in Denmark (1935) found that if insulin, which is highly acid, was combined with the basic protamine, a compound was obtained which had a pH equal to that of blood. This protamine insulin is more slowly absorbed and exerts a more prolonged effect than pure insulin.

A sample of this compound was obtained from Dr. Hagedorn and tried upon children, who often present the severest cases of diabetes. By the old technic insulin was given in the morning and the characteristic W-shaped curve was obtained, the child often awakening early with symptoms of exhaustion and nausea. By giving protamine insulin in the evening, together with insulin in the morning, there was obtained the curve of a mild diabetic, with no symptoms of insulin shock. Dr. C. H. Best and others have found that when minute quantities of zinc are combined with the protamine insulin, the efficiency of the latter compound is doubled.

A young male diabetic was presented who illustrated the gain in sugar tolerance experienced by a child given protamine-zinc insulin in the early stages of diabetes.

PREGNANCY IN DIABETES

In our records we have on file the cases of 308 pregnant women. The mortality of these pregnant diabetics is higher than that of nondiabetic pregnant women. In the past few years we have attempted to reduce fetal and maternal mortality by the proper prenatal care of diabetic mothers. Experience has taught that a toxemia precedes intrauterine death of the fetus.

Asphyxia is one of the greatest causes of infant mortality in diabetes. Our results show that it is not due to hypoglycemia. In a few preliminary experiments we have been successful in preventing this condition by placing the infants in a chamber containing oxygen and helium.

NOTICES

REMOVAL

M. A. WEINGER, M.D., announces the removal of his office to 375 Commonwealth Avenue, Boston. Telephone Kenmore 1365.

CLINICAL CONGRESS OF THE CONNECTICUT STATE MEDICAL SOCIETY

The annual Clinical Congress of the Connecticut State Medical Society, which was attended last year by 633 physicians from ten states, will be held this year in New Haven on Tuesday, Wednesday and Thursday, September 21, 22 and 23. The registration fee for the entire congress will be $2.00. The morning sessions, beginning at 9:30, will be held in the auditorium of the Sterling Law Buildings. The afternoon and evening sessions beginning at 2:15 and 8:15, respectively, will be held in the buildings of the New Haven Hospital and the Yale University School of Medicine. The evening meetings are section meetings which are open to all members of the congress.

On Tuesday morning the president of the Connecticut State Medical Society, Dr. Charles H. Turkington, of Litchfield, will preside. Dr. Francis C. Grant, of Philadelphia, will speak on "The Treatment of Cranial Trauma"; Dr. J. E. Moore, of Baltimore, will speak on "The Treatment of Early Syphilis"; Dr. Robert H. Aldrich, of Boston, will speak on "The Treatment of Burns with a Compound of Anilin Dyes"; and Dr. Frederick C. Irving, of Boston, will speak on "The Place of Cesarean Section." The afternoon sessions will begin with bedside clinics by the speakers of the morning. Dr. Grant will present a case of major trigeminal neuralgia, Dr. Moore a case of uncomplicated syphilitic aortitis and Dr. Aldrich a case of extensive burns. Following this, questions pertinent to the papers read in the morning will be discussed at panel discussions. The new talking motion picture on syphilis produced under the auspices of the United States Public Health Service and the American Medical Association will be shown in place of a symposium on syphilis. In the evening the section on dermatology and syphilology will hear Dr. George M. MacKee, of New York, speak on "Precanceroses"; and the Connecticut Public Health Association will hear Dr. Robert P. Knapp, of Manchester, speak on "Progress of Industrial Medicine." The Connecticut Medical Examiners' Association will also meet that evening, but the program has not yet been completed.

On Wednesday morning, Dr. Isidor S. Ravdin, of Philadelphia, will speak on "Surgical Diseases of the Extrahepatic Bile Ducts"; Dr. William B. Castle, of Boston, on the "Treatment of Various Types of Anemias"; Dr. Emil Novak, of Baltimore, on the "Treatment of the Menopause"; and Dr. Maurice Lenz, of New York, on "Clinical Experience with the Use of Radium and X-Ray in the Treatment of Cancer." In the afternoon Dr. Ravdin will present a case of lesions of the extrahepatic bile ducts, and Dr. Lenz cases of cancer of the head and neck. In the evening the section on anesthesia will meet jointly with the American Society of Anesthetists. This meeting will hear Dr. Henry S. Ruth, of Philadelphia, speak on "Problems in Resuscitation"; Dr. Louis S. Goodman, of New Haven, on "The Chemical Mediation of Nerve Stimuli"; Dr. Paul M. Wood, of New York, on "Modern Anesthesia for Upper Abdominal Surgery"; and Dr. Meyer Saklad, of Providence, on "A Method for the Collection and Analysis of Anesthetic and Surgical Statistics." The section on radiology will hear Dr. Bradley L. Coley, of New York, speak on "Diagnosis and Treatment of Bone Tumors"; and the Hezekiah Beardsley Pediatric Club will hear Dr. James D. Trask, of New Haven, speak on "Some Laboratory Studies in Poliomyelitis."

On Thursday morning Dr. Oskar Diethelm, of New York, will speak on "Treatment of Psychoneurotic Disorders"; Dr. Arthur Steindler, of Iowa City, on "Fracture Deformities of the Upper Extremities—Wrist and Forearm"; Dr. Claude S. Beck, of Cleveland, on the "Treatment of Coronary Sclerosis and Angina Pectoris by Grafting a New Blood Supply to the Heart"; and Dr. Warfield T. Longcope, of Baltimore, on "Some Problems in Relation to Bright's Disease." In the afternoon Dr. Beck will show a motion picture concerning the treatment of cardiac compression, Dr. Longcope will present a case of acute nephritis and Dr. Steindler a case of low back pain. In the evening, the section on orthopedic surgery will hear Dr. Arthur Steindler, of Iowa City, speak on the "State Program for Crippled Children under the Social Security Act." The program for the meeting of the section on neurology and psychiatry has not yet been completed.

The papers read before the congress, or complete abstracts of them, will be published in subsequent issues of the *Journal of the Connecticut State Medical Society*.

On Tuesday and Wednesday afternoons members of the congress will meet for a social hour at the New Haven Medical Association. Section dinners will take place on the evenings of the meetings of the respective sections.

The Women's Medical Society of Connecticut will hold a luncheon meeting in conjunction with the congress. All women in medicine will be welcome.

Complete program and registration card can be obtained from the chairman of the Committee on Publicity and Registration, Dr. Maurice J. Strauss, 41 Trumbull Street, New Haven, Connecticut.

SOCIETY MEETINGS AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING MONDAY, AUGUST 9

SATURDAY, AUGUST 14—

*10 a. m.-12 m. Staff rounds at the Peter Bent Brigham Hospital. Conducted by Marshall N. Fulton.

*Open to the medical profession.

SEPTEMBER 13-17—Fifth International Congress of Radiology. Page 709, issue of April 22, and page 233.

SEPTEMBER 21, 22 and 23—Clinical Congress of the Connecticut State Medical Society, New Haven. Notice above.

OCTOBER 1 and 2—New England Surgical Society. Providence, R. I.

OCTOBER 5-8—American Public Health Association meeting. New York City.

OCTOBER 9—American Board of Ophthalmology, Chicago. Page 722, issue of April 22.

OCTOBER 19, 20, 21—Academy of Physical Medicine. Page 723, issue of April 22.

OCTOBER 25-29—American College of Surgeons. Chicago, Illinois.

NOVEMBER 1-12—1937 Graduate Fortnight of the New York Academy of Medicine. Page 1000, issue of June 3.

NOVEMBER 6—American Board of Obstetrics and Gynecology. Page 153, issue of July 22.

APRIL 4-8, 1938—The American College of Physicians. Page 41, issue of July 1.

JUNE 13 and 14, 1938—American Board of Obstetrics and Gynecology. Page 153, issue of July 22.

BOOKS RECEIVED FOR REVIEW

The International Medical Annual. A year book of treatment and practitioner's index. Edited by H. Letheby Tidy and A. Rendle Short. 605 pp. Baltimore: William Wood & Company, 1937. $6.00.

Clinical Reviews of the Pittsburgh Diagnostic Clinic. Guideposts to medical diagnosis and treatment. Edited by H. M. Margolis. 552 pp. New York: Paul B. Hoeber, Inc., 1937. $5.50.

Sex Life in Marriage. Oliver M. Butterfield. 192 pp. New York: Emerson Books, Incorporated, 1937. $2.00.

Physical Diagnosis. The art and technique of history taking and physical examination of the patient in health and in disease. Don C. Sutton. 495 pp. St. Louis: The C. V. Mosby Company, 1937. $5.00.

The Technic of Local Anesthesia. Arthur E. Hertzler. Sixth Edition. 284 pp. St. Louis: The C. V. Mosby Company, 1937. $5.00.

Public Medical Services. A survey of tax-supported medical care in the United States. Michael M. Davis. 170 pp. Chicago: The University of Chicago Press, 1937. $1.50.

Gastroscopy. The endoscopic study of gastric pathology. Dr. Rudolf Schindler. 343 pp. Chicago: The University of Chicago Press, 1937. $7.50.

L'Anaphylaxie. Expérimentale et humaine. Pasteur Vallery-Radot, G. Mauric et Mme Holtzer (ex-Hugo). 129 pp. Paris: Masson et Cie, 1937. 36 Fr. fr.

L'Embolie Pulmonaire. Recherches cliniques, anatomiques pathogeniques et thérapeutiques sur les embolies et les infarctus du poumon. Pierre Bardin. 192 pp. Paris: Masson et Cie, 1937. 35 Fr. fr.

Les Endocardites Malignes Prolongées. Étude anatomoclinique et expérimentale. André X. Jouve. 356 pp. Paris: Masson et Cie, 1936. 50 Fr. fr.

Conduite a Tenir en Présence d'une Colibacillose Urinaire Chronique. Paul Baron. 30 pp., 1937. 5 Fr. fr.

BOOK REVIEWS

Pediatric Dietetics. N. Thomas Saxl. 565 pp. Philadelphia: Lea & Febiger, 1937. $7.00.

It is probably true, as Dr. Saxl contends, that the subject of diet therapy for the sick child has been hitherto somewhat neglected. At any rate, there has never been any previous, serious attempt to bring together in one volume all the available data. The result is an excellent book. This does not imply that it deals exclusively with the matter of feeding in disease; far from it. The physiology of digestion in infancy and childhood is first discussed; then follow chapters on foods and foodstuffs, vitamins and minerals, their properties, sources and functions in metabolism; and two on infant feeding, maternal and artificial. In addition there is an appendix of more than 100 pages containing height and weight tables, general suggestions, physiologic data, classified food tables and recipes.

But it is the intervening long section on "Dietetic Management of Pediatric Diseases," occupying more than half the total space, which renders the book distinctive. Even to enumerate here all the conditions discussed would take too long; the list embraces abnormal states and symptom complexes,—for example, acidosis, allergy, constipation, diarrhea, dehydration,—as well as actual diseases, and includes the unusual as well as the common. The arrangement is alphabetical, as it should be in any work designed less for continuous reading than for reference. For each condition the principles of dietetic approach are set forth; for the most part there are specific suggestions as to menus and in many cases actual recipes. Yet the author has not fallen into the sin of discursiveness where none is required; when and where diet is a minor consideration the comment is appropriately brief. To insure expert and accurate information he has entrusted the writing of certain sections to other hands, with satisfactory results. The article on diabetes by Dr. James J. Short is of outstanding excellence.

Throughout the book one is impressed with the trustworthiness—the safety and sanity, if you will—of the point of view. A mature judgment has been at work, and in consequence there are few statements open to adverse criticism. Some may feel perhaps that on the question of infant feeding the author is overconservative, but this, in proportion to the whole, offers small ground for complaint. A highly useful feature in this section on infant feeding—and one which the reviewer cannot remember seeing elsewhere—is the analysis of all the commonly encountered proprietary foods. One would have expected in such a book a good deal of reduplication first and last, but the fact is otherwise. The tables and charts are mines of practical information.

In short, this book is a genuinely important, and in a sense unique, contribution to the literature of pediatrics. Dr. Adolph DeSanctis in a foreword expresses the opinion that "this volume marks a considerable step forward in the concerted effort to insure the proper development of our children." Perhaps that is not too much to think. At least it will constitute a valuable addition to the library of any physician whose work extends to the care of children, whether or not this is his exclusive field. To the nutritionist and dietitian its significance goes without saying. It will be a great pity if it does not achieve wide circulation.

Clinical Reviews of the Pittsburgh Diagnostic Clinic. Guideposts to medical diagnosis and treatment. Edited by H. M. Margolis. 552 pp. New York: Paul B. Hoeber, Inc., 1937. $5.50.

As everyone knows, the Medical Society of the State of Pennsylvania has followed for many years a progressive program in relation to postgraduate medical education and has developed an excellent plan. The Pittsburgh Diagnostic Clinic for several years has also been working toward the improvement of postgraduate education in Pennsylvania, and this volume is tangible evidence of its endeavors.

The editor says: "With the purpose of presenting the practical features of advancing medical knowledge in condensed and readable form, the Pittsburgh Diagnostic Clinic began, in 1931, the publication of a series of brief expository reviews on selected medical subjects." These reviews now are gathered together in book form.

The reviews published in the present volume cover a wide range of subject matter; the psychoneuroses, endocrinology, arthritis, cardiovascular diseases, hematology, gastro-enterology—to mention a few of the topics reviewed —each receive consideration.

The reviews are written by eight contributors with an editor-in-chief in command. Each review is short, averaging about ten pages. "Always," it is said, "the requirements of the general practitioner have been kept in mind, the consistent intention being to present a summary, critically analyzed, of what we regard as accepted present-day medical concepts. In adhering to this ideal of simplicity and practicability, research details have been eliminated, and controversial matter avoided as much as possible."

Each review is well written and has been carefully edited. Everything unessential has been deleted. Again, to quote the editor: "The essays comprising this volume are not designed to supplant works of reference on the subjects treated here. Rather, we aimed to present new guide

posts in modern medical diagnosis and treatment, through brief expositions of currently accepted views."

The literature has been cleverly handled. Each writer has so saturated himself with his topic that he has written of it as though it were part of himself and as though what he said were crystallized from his own experience. Yet at the end of each essay is an excellent, carefully assembled bibliography giving authors' names, titles of the papers, and page references to the periodicals wherein the articles may be found. Thus any reader who wishes to go farther in any subject is supplied with substantial, clearly-marked guideposts.

On the whole, this method of postgraduate instruction demonstrates an interesting modification of the technics already established, and appears to offer a good deal of promise. If future volumes keep up to the standard of the first one, "Clinical Reviews of the Pittsburgh Clinic" will quickly come to occupy a choice place in the libraries of all medical schools and will make popular reading for all doctors.

THE CHEMISTRY OF NATURAL PRODUCTS RELATED TO PHENANTHRENE. An American Chemical Society Monograph. L. F. Fieser. Second Edition. 456 pp. New York: Reinhold Publishing Corporation, 1937. $7.00.

The first edition of this work was reviewed about a year ago in the *Journal* (215:221 [July 30] 1936). The rapid accumulation of knowledge in the field of sterol chemistry has necessitated the addition of a survey of recent literature in the form of an appendix. Only minor changes have been made in the original text.

As stated in our original review, this volume presents admirably a survey of a new biochemical field. Among the substances treated are the following: morphine and apomorphine, cancer-producing hydrocarbons, bile acids and cholesterol, vitamin D, the various sex hormones and cardiac glycosides.

The subjects are presented chiefly from the standpoint of structural organic chemistry. To biochemists, pharmacologists and specialists in the fields above indicated this book will be found indispensable for reference work.

SURGICAL TREATMENT. A Practical Treatise on the Therapy of Surgical Diseases. James Peter Warbasse and Calvin Mason Smyth, Jr. Second Edition, Thoroughly Revised and Reset. In three volumes with separate index. 2617 pp. Philadelphia and London: W. B. Saunders Company, 1937. $35.00.

This book is a complete revision of the first edition published in 1918, brought up-to-date with the collaboration of the junior author. The preface of the original work stated: "In most surgical diseases there is an ideal course of treatment which may be pursued and which represents the highest possibility of surgery. The author has endeavored to present this maximum of treatment. Every consideration has been given to direct the surgeon toward the ideal of perfection. This work presents alternatives of treatment which may be employed if the best thing possible cannot be done."

The book undertakes to cover the entire field of surgical diseases, including the special fields of neurosurgery, otolaryngology, ophthalmology, orthopedics, genito-urinary surgery, thoracic surgery and gynecology. Operative procedures are stressed, and presented in detail with excellent illustrations. There is no evidence that special collaborators contributed to or supervised the special fields; there are no bibliography, minimal reference to the literature, and almost no use of eponymic designations of operations, procedures or instruments. Fundamental procedures and methods are given considerable attention; thus there are presented about fourteen methods of arterial suture, eleven methods of intestinal suture, and thirty-nine illustrations devoted to methods of tendon suture. Drugs, ointments, antiseptics and anesthetic agents are fully described, although many details of preoperative and postoperative management are slighted.

Presumably a work of this sort is intended to fill the gap between the usual one volume undergraduate textbook on the one hand and the large system of surgery and the special-field monographs on the other. Thus it should chiefly meet the requirements of the occasional surgeon or general practitioner, the small suburban or rural hospital, or the student whose funds or interest encourages him to go more deeply into the study of surgery, and it seems fair to appraise the book from the point of view of the benefit to these prospective readers.

Inevitably a work confined to treatment alone must suffer by omission of certain aspects of disease which more properly belong to the fields of diagnosis or prognosis. It is as important for the occasional operator to recognize the stage of appendicitis with spreading peritonitis when operation is unwise, as it is to know how to bury the stump of the appendix in the wall of the cecum. It is as important to recognize that carcinoma of the breast has reached an inoperable stage as it is to know how to carry out radical mastectomy. Indications for certain operative procedures are of the greatest importance. Virtually no attention is given in this work to indications for operation.

Another difficulty has confronted the authors in the attempt, quoted above, to present alternative methods of treatment for various conditions. Perhaps for the sake of completeness, many procedures are outlined which actually are obsolete, ineffective, experimental or dangerous. In some instances these procedures have been so designated, but often there is no such warning signal. Thus a paragraph is devoted to discussion of the technic of washing out the abdomen with ether in cases of general peritonitis. It is recommended that in cases of intestinal obstruction, after ileostomy has been carried out, a suction tube be introduced into the bowel to suck out all the intestinal contents. Posterior gastroenterostomy is advised as part of the operation for perforated duodenal ulcer. Open drainage of amebic abscess of the liver is recommended. Splenectomy is discussed as a desirable treatment for pernicious anemia.

In regard to treatment of varicose veins, "ligation of the femoral artery, below the point where the deep femoral is given off, . . . has been of service in some cases." In the treatment of lymphangitis of the extremities, "the hard red streaks . . . should be painted with four or five coats of tincture of iodine." In carcinoma of the esophagus, "curettage of the occluding tumor is feasible." "Tuberculosis and syphilis of the vulva are treated the same as in other parts. Excision of the local lesion is followed by cure in about 75 per cent of cases."

"When a hypercalcemia is discovered, . . . removal of one or more of the parathyroid bodies will control the situation. . . . It is not necessary that any pathological lesion of the parathyroids be demonstrated." In regard to cerebral apoplexy, "surgery can do much for this condition which in every respect is a surgical lesion."

It is to be feared that the inexperienced reader, eager to benefit his patient, might seize on such an unorthodox procedure as one of those quoted.

Presentation of orthodox procedures is, in the main, well done. Emphasis and proportion occasionally leave much to be desired. Shock is accorded four pages of text; the administration of fluids and transfusion receive an-

other ten pages. Bone tumors are dismissed with less than a page. On the other hand thirteen pages are devoted to the management of syphilis, and about twenty pages to various skin diseases which properly fall within the province of the dermatologist rather than that of the surgeon.

The sections dealing with the treatment of malignant diseases do not assign a very significant role to radiation. Very radical operative procedures are described and recommended. In regard to inoperable carcinoma, "if the surgeon can remove most of the growth he is justified in operating." Various omissions are noted in the text and index. Thus there is no mention of Volkmann's contracture in discussion of supracondylar fractures of the humerus. Pilonidal sinus does not appear in the index although sacrococcygeal cyst receives a brief paragraph. The use of fascia lata sutures is not touched upon in the discussion of hernia. There is no mention of esophageal varices. The operation of nephrostomy is not mentioned. Rupture of the supraspinatus tendon receives no discussion. There is no mention of anaerobic streptococcus infections or symbiotic ulcerations of the skin. This list of omissions is by no means complete.

In general, this work offers several valuable features, and may serve as a useful reference for the surgeon of considerable experience. The illustrations of operations are in most instances adequate. For the student or general practitioner and surgeon, the lack of emphasis on indications for the operations described and the inclusion of outmoded or hazardous methods of treatment seriously detract from its value.

PHYSICAL DIAGNOSIS. The art and technique of history taking and physical examination of the patient in health and in disease. Don C. Sutton. 495 pp. St. Louis: The C. V. Mosby Company, 1937. $5.00.

It is probably true that in no two medical schools is physical diagnosis taught in precisely the same manner. It follows that no single textbook on this subject will be entirely suitable for each and every school. But as textbooks go Dr. Sutton's would, in the reviewer's opinion, be more likely to fill the bill than any other.

It is relatively brief. It is profusely illustrated, and by and large, the illustrations are good. It is orderly, systematic and simple. The type is clear; the paper annoyingly shiny. After an excellent review of the history of physical diagnosis there follow chapters on history taking, general examination, the lungs, the heart and the abdomen. There is a very brief exposition of the neurologic examination. The signs and symptoms of the more common pathologic conditions are discussed—though rather briefly. There are excellent diagrams and anatomic drawings. In the reviewer's opinion it is a pity that there is little or no effort to link up the clinical findings with physiology, pathology and the other preclinical sciences. Perhaps more attention should have been paid to the normal variations of the signs in the chest. The classification of rales is not an orthodox one, but anyone who can classify rales to another's satisfaction is a genius. The apex of the right lung is not commonly referred to as "normally more hyperresonant than the left." Many cardiologists would not agree that the third heart sound "is not readily heard by auscultation," and the statement that "history is relatively unimportant" in diagnosing vascular disease might easily mislead the beginner. References for supplementary reading could easily have been added and would have been most valuable. But these are small points, and after a careful reading of the entire book, this reviewer believes that Dr. Sutton's book is well worth recommending as a textbook in the subject which he treats.

Experience has taught, however, that it is the student who is the final judge of a book's worth. This perhaps is as it should be.

SHORT-WAVE DIATHERMY. Tibor de Cholnoky. 310 pp. New York: Columbia University Press, 1937. $4.00.

This is a well-organized treatise, replete with quotations from writers of this country and abroad. It contains very little reference to personal experience of the author. It might be summed up as a report on the progress of the subject of short-wave therapy which should give encouragement to other workers in this field, especially those who are in a position to engage in research.

The author stresses the need for conservatism and caution in claims made for curative and specific properties. This book states the importance of a knowledge of medicine, surgery and physics combined with experience by those who use short-wave therapy. The extensive bibliographic references to authorities in various fields of high-frequency currents establish this work as an up-to-date report even though, as the author states, there is still much to be worked out before this therapeutic measure can be claimed to have any specific effect in the treatment of disease. More emphasis might well be given to regulating the treatment to individual requirements. Recent investigators of short-wave therapy advocate the use of electrodes placed in parallel over the area to be treated rather than in apposition as described by the author.

This book will be a valuable aid to those who wish to acquire knowledge of the subject and who have not the time to read the literature, very little of which is easily available.

ACTA PATHOLOGICA ET MICROBIOLOGICA SCANDINAVICA. Supplementum XXXI. Ueber die sog. Kompensatorische Nierenhypertrophie. Erik Moberg. 161 pp. Copenhagen: Levin and Munksgaard, 1936.

This is a report of experimental investigations conducted on white rats on the so-called compensatory hypertrophy of the kidney, with especial reference to the relation of its anatomic development to its function. By a special operative technic the author eliminated varying amounts of kidney tissue and studied the subsequently occurring anatomic hypertrophy of the kidney in relation to the kidney function. The function was estimated by the excretion of three substances: (1) the amount and specific gravity of urine excreted per unit of time, (2) the amount and concentration of urea excreted, and (3) the amount and concentration of sodium chloride excreted. The author found that hypertrophy had begun within one month after operation. It reached its greatest development in those cases where the reduction in kidney tissue had been most extreme and where the animals had lived for a long time after the operation, and in some of these cases it amounted to several hundred per cent of what had been left. Observations made on the relation between the hypertrophy and the kidney function showed that anatomic hypertrophy could occur without any change in function, and in fact that it could even develop simultaneously with an impairment of function.

From this the author concludes that anatomic hypertrophy and a possible functional improvement have no direct connection and, therefore, the so-called compensatory hypertrophy of the kidney cannot be regarded as a process of any value for functional capacity.